

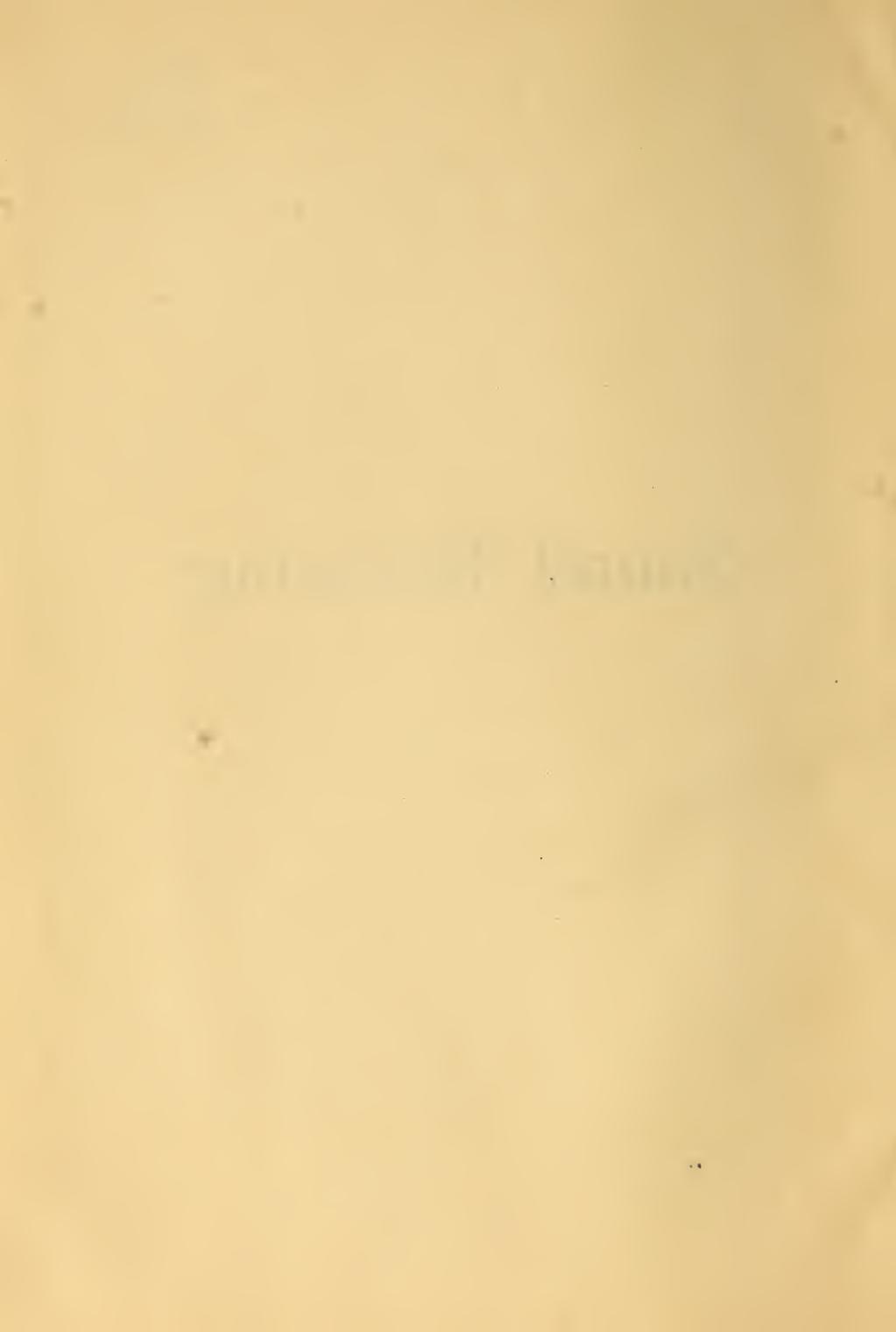
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Sound Investing



SOUND INVESTING

By

PAUL CLAY

A book for

Estates

Stock and Bond Dealers

Business Proprietors and Partners

Lawyers, Doctors and Professional Men

Banks, Trust Companies and Insurance Companies

Railroad, Industrial and Manufacturing Companies

Colleges, Hospitals and Other Institutions

Salaried Employes of Business Houses

Clerks and Laboring Men

Women and Dependents

Trustees

NEW YORK

MOODY'S MAGAZINE AND BOOK COMPANY

1915

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No. 1.

PREFACE

The aim of this book is entirely practical. It is to offer directions to the uninitiated, to enlarge the understanding of the small investor and to assist the experienced buyer of securities.

Many of the subjects here treated were partly developed by the author during the past two years under the general direction of Mr. John Moody, for Moody's Investors Service, a private publication, where they met with enough appreciation to warrant their further development into a permanent form.

The author makes no attempt at profound or scholarly discussion, but seeks only to set forth common-sense methods of avoiding losses, and increasing one's investment income.

PAUL CLAY.

New York, November 1915.

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SECTION I
THE USE OF THIS BOOK

I

Use of This Book

THIS book is intended for reference. It should answer your question at a glance, and does not require to be read through in order to be useful to the reader.

Those who wish to use it solely for reference can readily find any of the details treated by reference to the alphabetical index in the back, or possibly even to the table of contents. But those who are not familiar with the art of investing can get the most value out of the book by proceeding about as follows:

First, peruse the three chapters in Section I. to obtain a general idea of the different classes of stocks and bonds, of the merits and characteristics of each class, and of the best methods of handling securities with a view to obtaining the largest possible yields and profits consistent with safety.

Second, the investor, especially if inexperienced, should observe in the table of contents under Section III. to which of the ten classes of persons he belongs, and read the chapter upon his particular class. In this way he may find what kinds or types of stocks and bonds are most likely to satisfy his own peculiar or personal needs.

Third, having learned what types of securities he

wishes to buy, the next step is to peruse the description under Section II. of each particular type selected. If, for example, he has decided upon the purchase of a short term note, he will be interested in observing the general distinctions between safe and unsafe notes, and the peculiar merits of notes as a class. Each chapter in this section gives detailed attention to the varying methods of analyzing different types of bonds, notes and stocks.

Fourth, Section IV. is intended to answer the practical every-day questions which the investor is bound to meet after he has decided what to buy. Among these are the questions where to find the particular security wanted, how to select a bond house or broker, how to buy or sell, what the stock or bond ought to yield, and how to make the best use of securities held for investment. One short chapter is devoted to considering the feasibility of speculation; and in the back of the book is given a short and rough method of finding the approximate yields of bonds without buying expensive bond tables.

II

Types of Securities

BROADLY speaking, the leading types of classes of securities are mentioned in this chapter in the decreasing order of their stability. Of course it is quite impossible to say that every municipal bond, for example, is more stable than every railroad mortgage bond; for on the contrary there are a great many exceptions. However, it remains true that the best municipals are superior to the best railroad mortgages in point of security and stability, and that the various gradations of the former are likewise superior to corresponding gradations of the latter. From time to time, as industrial and financial conditions change, certain types of securities rise or fall in rank; but it is believed that the order here given will remain approximately correct for a considerable period of years.

United States Bonds: To investors generally United States bonds are of little interest, since they yield only $1\frac{3}{4}$ to $3\frac{1}{2}$ per cent. Their greatest use is by national banks who deposit them as security for bank note circulation, or for government deposits. However, they are among the very best bonds in the world, and are, practically speaking, as good as cash. For the man who is indifferent to the matter of yield and does not

wish to carry his surplus funds in banks, these are just the thing. Even in the panic of 1907 they depreciated only about 5 per cent.—from which they quickly recovered.

Other Governments: Next in the order of stability, in this country at least, are the bonds of the various states. These yield from $3\frac{3}{4}$ to $4\frac{3}{4}$ per cent. and are generally better than most of the bonds of foreign governments. The great mass of the burdens of government in this country fall upon the United States Government, and upon the municipalities and minor civil divisions—so that the states are left with only very small debts and their obligations are accordingly gilt-edged. It is only a few of the oldest and most stable foreign governments, such as those of Great Britain, France, and Germany, whose obligations are equal or superior to those of our states. In considering a foreign government bond much attention must be given, first, to the character and permanence of the government itself; second, to the amount of its debts and the burdens of taxation; and third, to the per capita wealth of the people.

Municipal Bonds: The obligations of American municipalities yield all the way from $4\frac{1}{4}$ to $5\frac{1}{4}$ per cent. varying according to the condition of the bond market, and the investment standing of the particular municipality. In the panic of 1907 these bonds generally fell about 11 per cent., in comparison with 5 per cent. for

United States bonds, and 7 for state issues. As a class, they are less secure than either, but still rank away up among the gilt-edged types of securities.

Many of our municipalities are rushing into debt with extravagant disregard for the future, and not a few of them are so corrupt politically as to injure their own credit. There have been but few instances of default; and upon the whole defaults with these bonds are always improbable. Nevertheless, the growth of city debts has wrought a great change during the past ten years in the general position of municipals. Formerly they ranked far ahead of railroad mortgages, and yielded about 1 per cent. less; but now there is very little difference in intrinsic merit between underlying railroad mortgage bonds and the best municipals.

These are reasons, not for avoiding such issues, but rather for using discretion in purchasing them. Some of them are as good as state bonds, and better than many foreign government issues. The obligation of a municipality, whose population, wealth and business are growing with more than average rapidity, and whose government is not unusually corrupt, is always desirable. By sharp watching the investor sometimes has the opportunity to obtain a very good municipal bond on a 5 per cent. basis; and it would be difficult to obtain such yield with equal or greater safety of principal in any other way.

Raidroad Mortgage Bonds: Excepting government

securities railroad mortgages still rank at the top of the whole investment list, and there is no probability of their being superseded in this position by any other type of bond. They are better secured by assets than most of the gas and electric light issues, and their earning power is less subject to municipal interference than either lighting or street railway obligations. In panics they usually fall 10 to 16 per cent., but this is due more to the forced liquidation that occurs at such times than to any real lack of intrinsic merit.

There are naturally all sorts of mortgages from the underlying first liens, which have behind them from 150 to 500 per cent. in physical assets, to the second or third liens which are scarcely covered by assets. The best bonds are of course those secured by underlying first liens; and these yield from $4\frac{1}{4}$ to 5 per cent. in ordinary times. They are a good cash equivalent, and are generally as safe as money deposited in almost any bank.

Gas and Electric Light Bonds: The obligations of gas and electric lighting companies are high grade as to both security and stability, notwithstanding a rather general lack of information as to real assets and earning power. Because of the fear of political attack, and of a widespread popular belief that public utility concerns are so rich that they can stand deep cuts in their revenues for the benefit of the public, it is seldom that they can afford to make detailed statements of earnings. To do so would be to invite trouble.

Nevertheless their earnings are large and also fairly secure. In some cases the courts have held that they are entitled to a 6 per cent. net return on the capital invested, and that to reduce the rates for gas or electricity below the basis of a 6 per cent. return would be confiscatory. During business depressions too, public utility earnings hold much better than those of either railroad or industrial companies. This stability renders these bonds attractive to the conservative investor, especially in view of the fact that they ordinarily yield from 4½ to 5½ per cent.

Equipment Trusts: These are secured upon the rolling stock of railways, and are usually issued for not more than 90 per cent. of the cash cost of such equipment, and paid off in about ten annual series. Because of this arrangement those which remain outstanding become more and more secure as time goes on. They remain a lien upon the entire original purchase of equipment, and therefore steadily appreciate in intrinsic merit. Railroad equipment retains its value no matter what happens to the road employing it, and for this reason equipment trusts or car trusts are very secure. Indeed they are more so than a great many gas and electric light bonds; and upon the whole it is rather a fine question which of the two should be ranked first. These trusts or notes depreciate during bear markets even less than mortgage bonds, taken as a class, although not less than underlying mortgages. They yield about 4¾ to 5¾ per cent.

Street Railway Bonds: Upon the whole street railway companies are not financially strong. They do not carry large amounts of cash or current assets, and their revenues are very frequently the subject of political agitation. Hence it is that their bonds are semi-speculative. In buying them the investor needs to exercise a great deal of discretion, and to possess a knowledge of both the political temper of the community served, and the financial and physical condition of the given company. Some of the essentials are that the bond should show a large excess of available earnings over interest requirements, that yearly outlays for maintenance and depreciation should be sufficient to keep the property from deteriorating, and that the terms of the franchises should be satisfactory. Among street railway bonds some of the underlying issues are very high grade—a few of them ranking even ahead of gas and electric light bonds. As a class, however, these issues rank in the order here given and yield about $4\frac{3}{4}$ to $6\frac{1}{4}$ per cent.

Steel and Iron Bonds: These at present are among the very best of our industrial securities. The steel and iron business, although necessarily somewhat speculative because of the radical fluctuations in the demand for steel, has been developed in this country to a point where there is no longer any doubt as to its permanence or as to the genuine value of bonds conservatively issued against physical assets. Even tariff changes cannot threaten any such bond. The guaranteed issues

of the subsidiary companies of the United States Steel Corporation are especially attractive, in spite of the absence of separate statements regarding the earnings of the issuing companies; and this is why they usually sell at prices which show only moderate yields. In general the bonds of steel and iron companies yield from $4\frac{3}{4}$ to $6\frac{1}{4}$ per cent.

Short Term Notes: The better grades of short term notes are among the best securities which the conservative investor can find, but much discretion must be used in determining which are the better grades. Note issues have so increased that they now constitute about one-third of all the security issues in the United States, excepting stocks; and there are constantly available a substantial number of notes to choose from. They are not as secure in law as many of the bonds mentioned above, but in practice their degree of security is greater than in theory. They are ordinarily issued in relatively small amounts, and run for only short terms of years; and for both reasons there is no real risk in buying the note of any corporation which is in a sound financial condition. It is the notes which show excessive yields that must be avoided; for as a usual thing the high yields denote a weak financial condition. Then, too, some corporations have adopted the very bad habit of issuing notes in large amounts—large, as compared with both annual earnings and total capitalization. Good notes seldom yield more than $6\frac{1}{4}$ per cent., and often they do not yield even 5 per cent.

Bank Stocks: In this term is included the stocks, not only of national banks, but also of other banks and trust companies. The security behind these is not very high—by which is meant that their value depends to such a large degree upon sound management, and is disclosed to such a small extent by balance sheets and income accounts, that the general public is hardly qualified to invest in them. They are more suitable as investments for wealthy men who are in close personal touch with the banks whose stocks they are buying. Broadly speaking, they are less secure than corporation notes because prosperous banks seldom liquidate, while unprosperous ones are scarcely ever able to pay their stockholders anything more than par. Meantime almost every good bank stock, because of its earning power, sells considerably above par.

As a class, these stocks yield only $3\frac{3}{4}$ to $4\frac{1}{2}$ per cent. on their price; but the large investor, who is in close touch with the affairs of a number of banks, frequently has the opportunity to make big profits by purchasing the stock of a bank whose deposits are on the eve of making large gains. Any great increase in deposits is fairly sure to be followed by a corresponding increase in earnings and dividend payments. Thus it is that bank stocks sell at prices which are hardly warranted by their average income, and have come to be considered as “rich men’s investments”.

Railroad Junior Bonds: Among these are all of the many varieties of railroad bonds which are not fully

secured by assets. To be "fully secured" means to have enough assets behind them so that in the event of a foreclosure sale the bondholder would receive par. The principal types of junior bonds are second and third mortgages, collateral trust issues, convertibles and debentures. Because of the great variety of these types their yields vary all the way from $4\frac{1}{4}$ to 6 per cent. In buying them it is necessary to use a great deal more care and discrimination than in the purchase of first mortgage bonds.

Convertibles are bought primarily for their promise of profit on the principal; but this promise has been widely overestimated. In order for such a profit to be obtained, the stock into which the bond is convertible must rise and sell substantially above the conversion price. In other words, the value of the convertible privilege often depends upon an expected increase which never occurs in the value and price of the stock. Some railroad convertibles, however, are so well secured as to principal that they can well be bought upon the theory that if the stock does go up they will show a considerable profit, while if the stock does not go up they will remain fairly good investments. Before buying a convertible at a price which at all exceeds its value as a pure investment, one should closely study the earning power and prospects of the stock.

Debenture bonds, and indeed some collateral trust issues secured by stock collateral, are practically nothing but promises to pay. For this reason they may

fairly be regarded as if they were notes, and judged according to the excess of net earnings over fixed charges. The debenture of a railroad whose net earnings exceed its average fixed charges by less than 25 per cent. should show a very high yield and may prove a poor investment even then.

Equipment Company Bonds: Reference is here made to the bonds of companies engaged in the manufacture of railroad or electrical equipment. The makers of railroad equipment have generally financed themselves with stocks rather than bonds; and in the case of electrical manufacturing companies the merit of a bond is almost entirely an individual question. One important consideration is the distinct tendency for the margin of profit in the electrical manufacturing business to decline. Because of this, large bond issues on the part of such a company would be an evidence of lack of conservatism. The business of such concerns as the General Electric, the Western Electric and the Westinghouse Electric is not subject to such violent fluctuations as is that of the makers of railroad equipment; and therefore their bonds, other things being equal, should be somewhat higher grade. Bonds of this class are not numerous, and yield from $4\frac{3}{4}$ to 6 per cent.

Manufacturing Company Bonds: Manufacturing business with but very few exceptions is subject to violent fluctuations. In a panic the typical manufacturing company suffers a loss of 20 to 60 per cent. in net

earnings, as compared with 10 to 20 per cent. for railroad companies. Manufacturing bonds, therefore, are ordinarily dangerous investments for all those who are not familiar with the branch of business in which the given company is engaged. It would be safe enough for a cotton manufacturer to buy the bond of a cotton mill, but it might be very dangerous for a lumber dealer, or drygoods merchant, or even for a banker, to buy the same bond. These latter individuals are hardly qualified by their business and associations to judge the earning power and stability of a cotton mill.

Manufacturing companies do not, as a rule publish enough details as to either income or assets and liabilities to show whether their bonds are sound investments; and therefore the buyer of such bonds is taking a leap in the dark unless he has special knowledge. These facts are well illustrated by the disastrous declines in Allis Chalmers 5s, International Steam Pump 5s and in many other manufacturing company bonds which were once considered high grade investments. It is nevertheless true that those who actually possess the required knowledge can obtain a handsome return varying from $5\frac{1}{2}$ to $6\frac{1}{2}$ per cent. through the purchase of the bonds of strong manufacturing companies.

Copper Mining Bonds: Bond financing has not been extensively used by copper companies, and therefore there are not many of these bonds. In theory they are not safe investments because of the great un-

certainty as to ore reserves and metal prices; but in fact they have proved to be excellent investments thus far, simply because copper companies have issued bonds only for a small fraction of their total assets. These bonds are often issued to secure capital for development work, and sold before any great earning power has actually been attained. Furthermore, they are almost always convertible into stock; and the great advance in a copper stock which occurs when the property becomes a large and successful producer, causes a similar advance in copper mining convertible bonds. The factors above mentioned prevent such bonds from being literally high grade investments; but thus far those who have bought them as soon as issued, and sold them during a bull market in the stock concerned, have made remarkable profits.

Coal Company Bonds: Although the coal mining industry is one of the great businesses of the United States, coal company bonds have occasionally proven poor investments. This is due to the unscientific, or even careless manner, in which such bonds have sometimes been issued. There have been cases where they have been issued and sold against entirely undeveloped property in amounts exceeding the actual value of such property. Such a security is not a bond at all, but merely a possibility of a future bond. For an investor to buy any bond issued against an undeveloped property, unless he fully realizes that he is taking a speculative chance, is entirely unwise. Coal lands very often

are sold by speculators to the companies which intend to develop them at such high prices that the operating concern is unable to show a reasonable profit on its investments. Nevertheless good coal company bonds are satisfactory investments, and yield from $4\frac{1}{2}$ to $6\frac{1}{4}$ per cent.

Irrigation Bonds: In the United States irrigation bonds have been a failure, even though there is no fundamental reason why they might not be perfectly good if issued in the right way. The trouble is that agriculture in this country is extensive rather than intensive, and that with extensive agriculture the value of the product per acre of land is not sufficient to induce farmers in any great number to pay the cost of irrigation. With intensive agriculture, where the annual growth per acre is worth from \$100 upward, irrigation pays. In this country, however, intensive agriculture does not generally pay, because land is cheaper than labor. In 1899 the crops produced on all irrigated lands in the United States were worth in the aggregate only \$86,800,000, whereas the irrigation systems cost \$67,700,000.

Before buying a bond of this type, the investor should satisfy himself, through his own personal investigation, of these four points:

(1) That the irrigation service is so necessary to the production of crops that it will not be discontinued by

the farmers to such an extent as to destroy the profits of the company.

(2) That the company owns a permanent and adequate source of water supply.

(3) That the price received for the service is sufficient to be profitable, and that the company is neither under-estimating its operating costs or neglecting depreciation charges.

(4) That the irrigation works are not over-capitalized, and that proper sinking funds are provided.

Light and Power Preferred Stocks: The preferred stocks of gas light companies, or of electric light and power companies, are among the best of stock investments whenever they are issued by conservatively managed companies. Once in a generation or so people so change their manner of life as to bring into existence entirely new industries, and this is one of the instances. Prior to 1890 electric light and power companies were of no great consequence; but from 1907 to 1912 the earnings of such companies in ten representative states showed an average increase of 61.77 per cent.

The growing popular consumption of gas and electric light has given these companies a permanent and stable place among our industries; and the rapid increase in earnings has made their preferred stocks quite attractive. Such stocks yield from $5\frac{1}{2}$ to $6\frac{1}{2}$ per cent. and display more stability during panics and depressions than the great majority of other stocks. The investor

should, however, satisfy himself that the company is conservatively capitalized; that its franchises are satisfactory; that it is reasonably free from dangers of drastic reduction in the price of gas or electricity; and that the stock has an average earning power equal to at least 175 per cent. of its dividend requirements.

Railroad Preferred Stocks: Notwithstanding the great progress which street railways and certain classes of industrial companies have made, it remains true that railroad preferred stocks are the best in this country, except some gas, light and power preferred issues. In a great many instances they are even superior to those of lighting and power companies. The reason for their high quality is to be found in the moderation with which they are issued, and in the wide margin of safety which they generally show. Even in 1910 there were in the United States only \$1,403,488,842 in preferred railroad stocks outstanding as compared with \$6,710,-168,538 common; and since then the ratio of preferreds to commons has been decreasing. These stocks in that year earned an average of 26.75 per cent. available for dividends against only 6.43 per cent. for the common issues. More recent statistics would not with equal fairness disclose their position since conditions in the railroad field during the past few years have been continually abnormal.

For the investor who is not satisfied with the yields of bonds these are very satisfactory, since their return averages between 5 and 6 per cent. There are times

indeed, especially in panics, when they can be bought on a $6\frac{1}{2}$ per cent. basis. The principal concern of the buyer should be to make sure that the property is well managed and to keep watch of the monthly earnings as reported by the Interstate Commerce Commission.

Street Railway Preferred Stocks: As a class the preferred issues of street railways are on a lower investment plane than those of steam roads for a number of very tangible reasons. They do not generally earn as much, are more heavily capitalized, and are more frequently subjected to really serious governmental interference. Of the three principal classes of governments in this country the United States government is the most serious, responsible and regardful of property rights; and the municipal governments are as a rule the least responsible. Hence it is a disadvantage of street railways that they are directly subject to the latter.

In normal times the gross earnings of railroads are so large in comparison with capitalization as to be equivalent to about 16 per cent. thereof; whereas those of street railways are equivalent to only 11 or 12 per cent. of total capitalization. Correspondingly, street railway net income averages only 4 or 5 per cent., while that of steam railroads used to average 5 or 6 per cent. The two are about equal in net income, but the steam roads earn about one and a half times as much on their preferred stocks as the street railways. It is therefore wise in purchasing a preferred issue of the latter to be familiar, not only with the earnings and condition of the property, but also with

its franchises and with the political complexion of the municipality. The yields vary widely from $5\frac{1}{4}$ to $6\frac{3}{4}$ per cent.

Industrial Preferred Stocks: Still greater are the elements of uncertainty in the preferred issues of industrial companies. It is simply impossible to invest wisely in these stocks without first acquiring by thorough study a genuine knowledge of the conditions of the industry in which one is going to make an investment. A great many people, for example, during the boom in fertilizer consumption in this country a few years ago, bought the preferred issues of the fertilizer companies, supposing them to be high grade and stable investments. They were totally unaware that fertilizer consumption was bound to slump, and that the position of these stocks was certain to be hurt thereby. There are in like manner peculiar individual conditions which effect steel and iron stocks, and those of lead companies, oil companies and leather companies.

Neither is it safe to put one's faith in the safeguards which are often embodied in the restrictions under which these stocks are issued. Such restrictions, when a company becomes embarrassed, usually fail to protect the stockholder, and many of them indeed are more technical than real. Practically the only genuine safeguards are moderate capitalization, large earning power, conservative management and a thorough knowledge on the part of the investor of both the industry and the company in

which he is interested. The general yield is $5\frac{1}{2}$ to 7 per cent.

Mill Stocks: The stocks of cotton and woolen mills owe their investment position, which is fairly high, purely to their good management. It is the general policy of these companies in very prosperous years to make only slight increases in their dividends and save the balance to use in paying dividends in lean years. Besides this, the capitalization of most mills is relatively small and fairly conservative. For these and other reasons mill stocks have never become speculative footballs, and they fluctuate within a pretty narrow range of prices. In view of the character of the business, which is subject to violent fluctuation of earnings, this is not only surprising but also complimentary to mill managements.

In the panic of 1907 New England mill stocks generally depreciated but little more than half as much as New York railroad stocks. Yet it is seldom that any large class of mills ever shows earnings of much more than 5 per cent. per annum. Dividend payments vary between 2 and 6 per cent. per annum as a rule, and the stocks sell at such prices as to show a normal yield of $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent.

Railroad Common Stocks: There was a time a few years ago when the presumption was that the common stock of almost any American railroad either had, or soon would have, substantial intrinsic value. Such however, has been the drastic decline in earnings since 1910,

that this presumption has disappeared. It has now become the part of folly to purchase such a stock without first examining both its earnings and its capitalization. The average earning power of these issues after rising from 1.81 per cent. in 1897 to 6.72 in 1906, has since fallen to 4 per cent.

Conditions in the railroad industry have been distinctly unfavorable to the common stocks and are only beginning to change for the better. The margin of profit in the business has been narrowed down to such an extent as to make stock financing generally difficult; and in consequence bond and note financing has been so much used that interest charges absorb a large part of the earnings which were formerly available for dividends. There are still a large number of common railroad stocks which are good, although semi-speculative, investments. Their yield varies from $5\frac{1}{2}$ to $6\frac{3}{4}$ per cent., and for those who can afford to take some risk they are desirable, especially if bought in the midst of bear movements.

Industrial Common Stocks: Industrial preferred shares and mill stocks are the lowest classes of issues that can properly be termed investments as distinguished from speculations. Individually there are common stocks of both railroad and industrial companies which have such long dividend records and such large earning power that they are not at all speculative; but this is by no means the general rule. The buyer of a common stock has no guarantee of dividends other than the probabilities, first, that they will be earned; second that they

will be saved to the stockholder through wise management; and third that the directors will see fit to vote the payment of such dividends. There is no obligation on the part of a board of directors to maintain common dividends, and no way that the minority stockholders can compel them to do it.

All this applies with special force to the typical industrial common stock. Such a stock may or may not have any physical assets behind it, and may or may not represent any actual money investment on the part of its original holders. The features to be desired in it are steady earning power, stability of price, a long dividend record and a conservative management. The management must be judged largely by the statistics of earnings, assets and expenditures given in its annual reports. These stocks yield from $5\frac{3}{4}$ to $7\frac{1}{2}$ per cent., but each of them should carefully be examined before purchasing.

Copper Stocks: As investments, in the literal meaning of words, copper mining stocks are approximately at the bottom of the list. At least they rank lowest in stability of price, of dividend payments and of earning power. There is no such thing as making a copper stock investment so reliable that it does not need watching, simply because it is humanly impossible to control the underground conditions. If an ore body, even after lasting for generations or centuries, at last gives out, then the stock of the company is bound to slump no matter how conservative and efficient the management may be.

These stocks, therefore, are distinctly speculations and should be bought for their rise in price, rather than for their dividends. The man who habitually and continuously buys them for their dividends and holds them, and does this with a substantial number of the stocks of different copper companies, is apt to be a loser. But he who buys in bear markets after railroad stocks have dropped 19 per cent. or thereabouts and copper stocks from 30 to 50 per cent.—not points—is pretty sure to make money. To do so he must sell out in the next bull market, invest his funds in high grade securities and await another slump before repurchasing coppers. Nevertheless copper stocks handled in this way show huge returns; and if this method is persistently adhered to, in spite of the temptations to buy when prices are up to or above their average level, there is very little risk in it.

General Observations: In these descriptions of various classes of securities, it is certainly not intended to discourage the purchase of any. The purpose of pointing out the weaknesses and defects is invariably to enable the investor to make wise selections, and not to drive him away from the given type of stock or bond. Investments in any class of securities here mentioned will pay if handled aright; and it would be a complete mistake to place any security under the ban simply because it happens to belong to some particular class.

III

Managing Investments

REAL management of investment accounts is generally lacking. By this it is meant that the prevailing practice, after having made an investment purchase, is to keep the given stock or bond in one's safe deposit box until it matures, or else until need of money or alarm over the business position of the company which issued the security, induces the investor to sell it. Changing or shifting one's investment list from time to time to suit the condition of the financial markets is unusual, and yet very profitable. No doubt the persistence with which the public holds a certificate once bought is a good thing for borrowing corporations, and tends to give greater stability to security prices. Yet a little reflection will disclose the fact that to refuse to change one's holdings in accordance with the varying position of the stock and bond markets is to neglect a very valuable opportunity. To bring out this point let us notice some of the changes in recent years in stock and bond prices.

	Representative R. R. securities	Bonds	Stocks
Prevailing prices in August, 1896.....	73.88	41.82	
Thence occurred a rise to the spring of 1899.....	94.44	84.92	
From there prices declined to Sept., 1899.....	88.74	72.48	
The next high points were in 1902.....	99.53	129.36	
The low records of 1903 were in October.....	85.93	88.80	
Ensuing bull market ended in 1905 and 1906 at..	99.16	138.36	
In the panic of 1907 prices were lowest in Nov..	80.99	81.41	
The next bull market culminated in 1909.....	94.30	129.96	
In the war panic of 1914 prices were again down	79.75	87.40	

Both of these averages are based on lists of twenty securities, and the bonds taken are all mortgage bonds, although not of the very highest grade. These movements are quite sufficient to show that the swings of prices in bonds, to say nothing of stocks, are very wide. If it were possible to buy stocks close to the bottom, and sell them close to the top, a very small investment would soon make one rich, even though he allowed his money to remain absolutely idle during all the periods of declining prices. Even a bear market of two or three years duration would use up in loss of dividends and interest only a small fraction of the profits made in the previous bull market.

But unfortunately it is wholly impossible to either buy at the bottom or sell at the top. Hence the attempt to do so is not worth while; but the investor can nevertheless do the next best thing. He can so manage or shift his investments from one class of securities into another as to get a large benefit from the bull markets, especially in stocks and as to suffer small injury from bear movements. To do this, it is not necessary that he should have the superhuman discernment to pick either the top or the bottom of a movement. All that he requires is enough commonplace discretion to know when securities are dear and when they are cheap. When they are dear his policy should be to withdraw from his safe deposit box such stocks, notes and bonds as would be likely to depreciate most; sell them, and replace them with high grade low-return municipals, governments and

the like, which depreciate the least. That such an operation is well worth while may be seen from the following comparison of the percentages of shrinkages or depreciation of various securities during the bear movement and the panic of 1906 to 1907.

United States bonds.....	5.0%
State bonds	8.0
Municipals	11.0
Railroad underlying liens.....	12.5
Railroad bonds	15.7
Bank stocks	24.0
Industrial bonds	24.0
Railroad pfd. stocks.....	28.5
Industrial pfd. stocks.....	34.0
Mill stocks	22.0
Railroad common stocks.....	41.0
Industrial common stocks	48.5
Mining stocks	64.2

To take the most extreme illustration of the profit to be obtained by shifting investments rather than holding the same securities regardless of the swings of the market, let us suppose that a man who had invested all his money in mining stocks had early in 1907 sold them all and put the money in United States bonds. He would have made the exchange at a time when copper mining stocks in particular were yielding 5 or 6 per cent., and United States bonds scarcely 3 per cent. Such a loss of income would deter most any man from making the exchange; but had it been done, and had he suffered the 3

per cent. loss of income for a whole year, his saving for the year would still have been equivalent to 56 per cent. of his entire capital. Otherwise expressed, United States bonds shrank 59.2 per cent. less than copper stocks—so that the loss of every dollar of current income was rewarded by a saving of \$19.00 in the value of his principal.

In actual practice the largest possible saving would be very much less than this, and yet it is well worth the trouble. Manifestly there is no way to tell when a bull or a bear movement is going to end. Hence the exact time to make such exchanges of securities can never be determined; and since it cannot be, it therefore becomes a part of wisdom to gradually exchange from the less stable into the more stable securities as soon as stock and bond prices become relatively high, and to reverse the operation when prices are low. Low and high are very indefinite terms, but to one who watches the movement of any average of bond or stock prices, they are definite enough to serve the purpose. Averages of stock prices are published by almost every financial paper, and a few papers publish averages of bond prices. Indeed it would pay anyone investing more than a few hundred dollars to copy the prices of ten leading bonds each week, so as to have a record of his own to use in managing his investments.

When security prices become high, one should gradually exchange all his other investments into the first six to ten classes of securities mentioned in the Table of

Contents under Section II. No hard and fast rule can be laid down, since there are numerous small classes of securities which are not here treated, and since there are individual bonds which, because of their great peculiar merit, are very stable, even though not included in any of the six classes just referred to. It nevertheless remains true that when one descends in the list below equipment trusts, he begins to encounter securities which as a class depreciate in a great bear market more than 15 per cent. The return on such securities, even though it be high, is not sufficient to compensate the owner for such a shrinkage. Indeed, when security prices become very high, as they were in 1902, 1906 and 1909, it would be difficult to find any large class of securities, other than the above six, which are stable enough to meet the needs of the situation.

When, on the other hand, a bear market has progressed for a year or more, and has carried railroad stock prices down a general average of 20 to 40 per cent., it pays to reverse the operation. One may then safely dispose of extremely gilt-edged securities yielding less than $4\frac{1}{4}$ per cent. and begin to buy short term notes, junior railroad bonds, manufacturing company bonds and even good preferred stocks. After real panics, such as those of 1893, 1896, 1907 and 1914, it is safe to invest a large portion of one's total funds in preferred stocks, and to place a small amount of money in common stocks. Surprising as it may seem, the appreciation in price of common non-dividend-paying stocks bought immediately

after panics is so great as to more than offset the dividend payments and appreciation combined of really good standard issues.

Much can be accomplished by this general method of management. It is not a new or radical idea, but merely a practice which has not yet become very widespread or popular. There is of course no such thing as a safe way to get rich quick; but by shifting one's investments so as to increase the profits arising from a bull market, and decrease the losses consequent upon a bear movement, one's average yield can be greatly enhanced. With security prices at their average level, it is practically impossible to obtain an average yield of much more than $5\frac{1}{2}$ per cent. without assuming some considerable degree of risk. But if this method of management is followed, and followed with no more than ordinary intelligence, the average yield over any considerable period of years can be raised from $5\frac{1}{2}$ per cent. to $6\frac{1}{2}$ or even 7 per cent. Indeed, if the investor is favored with a moderate degree of good fortune as well as good judgment, he may even bring his average up above 7 per cent.

IV

Analysis of Values

A DETAILED discussion of the method of analyzing each class of securities will be found in the chapter on the given class. In advance, however, one should consider the general methods of analyzing all securities. The public has a well-established habit of judging stocks and bonds like individuals by their references, or in other words, by what men in good standing say about them. This, however, is a mistake; for a person has a moral character which, practically speaking, does not fundamentally change from birth to death. A stock or bond on the other hand has no moral character, and often so changes its nature as to become entirely different from what it was during the period of years when it acquired its reputation. New Haven stock, for example, after being one of the very best railroad stocks in the United States or the world, suddenly in the course of a very few years became a pure speculation of doubtful value. Likewise, New York City bonds from 1903 to 1910 changed their character from very gilt-edged to mediocre. The investing public, including 90 per cent. of our most intelligent men, get in the habit of thinking a given security has a certain character; and when the security changes its character, they do not correspondingly change their opinions.

Neither is it proper to rely entirely upon the broker or bond house through whom one makes his purchase. If, instead of a bond, it were a piece of real estate, one would have the title examined, even though the seller of the real estate were a man of the greatest business judgment and the highest integrity. In like manner it is merely the exercise of ordinary prudence to analyze the merits of the stock or bond one is buying even though it be most highly recommended by the very best of bond houses. Indeed, it is negligence to fail to do so; and the investor who commits such negligence should have no word of censure for the bond house, in case the stock or bond proves to be other than what he expected.

There is no one method of analysis which can be applied to all securities, because the securities themselves are so different in character. Aside from state and municipal bonds all other issues may be roughly divided into five classes, and each class has its own peculiar method of analysis. The first thing to do is to learn what is the "fluctuating principle" of the given stock or bond, that is, the principle or factor in accordance with which the price and value of the given security moves upward or downward. Further definition may be found in the introduction to the chapter on United States Bonds. Broadly speaking, the five classes of securities and the fluctuation principles of each, may be stated as follows:

(1) There are absolutely secure bonds having behind them 150 per cent. or more in physical assets. These

remain good no matter what happens to the issuing company, since they are certain to realize at least par even in the event of a foreclosure sale. Hence their price is merely a matter of yield or income basis. If the prevailing price of capital, which may be defined as the average yield demanded by the investing public, rises, then these bonds fall, and vice versa.

(2) There are the practically safe bonds which have behind them more than 100, but less than 150 per cent. in assets, and which would probably, but not with absolute certainty, bring par in case of a foreclosure sale. These depend partly upon the price of capital, and partly upon the maintenance of the status quo, or existing condition of the company's affairs. Any radical change in capitalization, indebtedness, or management is liable to affect their value almost as much as a similar degree of change in the prevailing price of capital.

(3) There are those securities which have behind them just about 100 per cent. in tangible or intangible assets, and which are therefore good investments, at least for the time being. These depend upon the earnings of the given company and upon the prevailing rates of interest in the money market. Interest rates affect stocks and junior bonds more than does the price of capital, because these junior securities are in competition with the borrowers of money. If a lender of money can obtain the higher return by buying commercial paper, or otherwise loaning to an individual, he is likely to do it; but if he can obtain the higher return through the purchase of a good stand-

ard stock or junior bond, he is likely to do that. Thus it is that interest rates directly affect this class of securities, whereas the price of capital has almost nothing to do with them. The latter is the yield which over a long period of years is satisfactory to the long-term investor, and interest rates are merely those rates which for periods of one day to six months are satisfactory to the lender of money.

This class of stocks and bonds is also affected by movements of earnings. As they have behind them not much over 100 per cent. in assets, their holders cannot feel at all sure how they would fare in the event of a receivership, and therefore they rely principally upon a constant and fairly large surplus of earnings over interest and dividend requirements.

(4) Next in order are the securities which, while good as long as earnings remain within certain limits, are nevertheless somewhat deficient in assets. Among these are many notes, debenture and convertible bonds and preferred stocks. The movement of interest rates, of course, affects not only the third, but also the fourth and fifth classes of securities here mentioned; but with this fourth class the prime factor is earnings. These securities do not rise at all proportionately as yearly earnings increase over and above 200 per cent. of dividend and interest requirements; but they do begin to show distinct weakness when earnings begin to fall below 125 per cent. of such requirements.

(5) Lastly, there are the pure equities which, if they

represent assets at all, have behind them not permanent physical assets, but rather fluctuating assets, such as bills receivable, bank loans, or treasury securities, and intangible assets such as good will, franchises and patents. These are mostly common stocks, but do include some notes and so-called bonds. They respond directly and almost proportionately in their price and value to the fluctuations of earnings. Furthermore, they are affected by everything that in any way affects the company.

Having thus noticed the fluctuating principle of each of these main classes of securities, it is proper to observe the method of analysis to apply to each class. To mix the methods would lead to the wrong conclusion, or beget a total absurdity. For illustration, if one were to judge a bond, covered by a 150 per cent. of physical assets, by the fluctuations of earnings, he might conclude in the event of a slump in net profits that it was worth only 60 per cent. of par, whereas in fact its true value might meanwhile have risen from 100 to 103 per cent. of par, because of a general decline in the price of capital. These methods then will be considered in the above order.

(1) Manifestly what is needed in the case of a bond abundantly secured by assets, or presumed to be so secured, is first, some test of the assets; and second, some knowledge as to the prevailing price of capital or income basis for other similar bonds. Assets cannot be judged by the balance sheets even of thoroughly reliable concerns. If an expert accountant were to set out to make

the balance sheet of his company exactly tally with the actual market value of all the assets possessed by any large company, he would have to employ an enormous force of engineers, appraisers and accountants; and even then he would in fact be obliged to draw up a new balance sheet every day, and sometimes several times a day. Balance sheets are then largely technical; and sometimes this technicality consists in marking down book values to a mere fraction of actual market values, while at other times it consists of writing them up to 200 or 300 per cent. of actual values.

Hence the average investor has no accurate test of assets, and must use the best makeshift he can. This is to be found by valuing the entire company, whether it be a railroad, or a public utility, or industrial concern, by means of the average prices of all its outstanding securities. Having obtained the aggregate actual market value of all these securities, he can then obtain the approximate physical assets by making a proper deduction or allowance for the non-physical assets. For example, if he finds that the plants and permanent properties of other companies engaged in the same industry—companies enjoying a high reputation—are worth 75 per cent. as much as the grand total assets of such companies, then he can safely assume that by deducting 25 per cent. from the aggregate average market value of the capitalization of the given company, he will obtain the approximate worth of its physical assets. To say the least, the use of such a method of estimating will save

him from buying bonds of poor quality in the belief that they are strictly high-grade first-mortgage bonds.

(2) The same test should be applied to this class, and in addition the changes in its capitalization, current liabilities and margin of safety should be closely examined to see whether the status quo is really being maintained. The significance of all these terms is explained in Chapter 45, which deals with the anatomy of annual reports.

(3) Analysis of the third class of securities should concern itself largely with the question of the genuineness of the net earnings shown. It is nothing unheard-of for companies of long standing and high reputation to occasionally issue an annual report made up in such a way, and so filled with technicalities, that it seems to show net earnings far in excess of the amounts actually earned. Upon minute examination it will always be found that such a report has made no actually false statements, but it is none the less deceiving unless closely analyzed. A dozen very prominent corporations in the United States have done this within the past five years. In testing the genuineness of earnings a principal point is to make sure that maintenance charges are sufficient to keep the physical properties from deteriorating.

As the values of these securities are also much affected by interest rates, the investor in determining what price he should pay for them should take into consideration any distinct tendency of interest rates, especially in the New York money market, to either rise or fall. In ob-

serving the course of interest rates, however, it should be borne in mind that money is normally high from September to December inclusive, and normally at its cheapest from May to July inclusive. According to ten-year averages, the mean rate for all money loaned in New York gradually rises from 3.63 per cent. in June to 5.83 in December, has a sharp fall in January, a temporary moderate rise to about 4.12 per cent. as an average in March or April, and then falls again. Comparisons of rates, therefore, should generally be made with the previous year rather than the previous month.

(4) In considering the future of earnings the principal factors are changes in wages, margins of profit and prices. By prices is meant not only the prices at which industrial companies sell their goods or commodities, but also those at which a railway sells its transportation, or a lighting company sells its gas or electricity. The percentage of net earnings to gross over a series of years will usually disclose the tendency of margins of profit to become narrower or wider. Wages, even where the actual figures are unobtainable, ordinarily respond to the prevailing tendency. The Steel Corporation, the International Harvester Company, and many other concerns publish every year figures showing their per capita wages; and the Interstate Commerce Commission gives similar data for railroads. It is safe to assume that the wages paid by almost any typical concern are moving in the same direction as those of these representative corporations.

(5) With common stocks and other pure equities, one must watch everything that throws light upon the course of earnings or the efficiency of managements. With railroads this means the monthly earnings as reported to the Interstate Commerce Commission, with steel companies it means the average prices of steel as shown in the various trade journals, the monthly exports of steel and iron published by the Department of Commerce, and the monthly statements of unfilled tonnage given by the Steel Corporation; and with copper companies it means watching the changes in the average prices of copper and in our exports, etc. The possessor of a common stock or any other pure equity can only prosper through eternal vigilance. In addition to these factors bearing directly upon the earnings of the particular company, he must watch the changes in the general prosperity, since these are certain to affect his company. The general prosperity in turn is best indicated by statistics of bank exchanges, gross railroad earnings, commercial failures, merchandise imports and commodity prices. It takes a very wise man to analyze correctly the value of a common stock. Indeed, the difficulty of correct analysis from Class (1) to Class (5) steadily increases, and at a geometrical ratio.

V

Personal Side of Investing

FROM what has just been said about the increasing difficulty of investing profitably in the less stable classes of securities, it follows that the more one knows about stocks and bonds, the better qualified he is to buy common speculative stocks, preferred industrials, junior bonds and the like. Curiously enough, those who are least qualified are most in the habit of buying such securities, whereas those who are best qualified to handle the stocks and bonds which are difficult to analyze are the most in the habit of purchasing gilt-edged bonds which are thoroughly secured by a surplus of physical assets.

This anomalous situation arises naturally from the training and experience of the two classes of people. One who has had a great deal of experience with investing realizes the difficulty of foreshadowing the future of a common or preferred stock, a debenture bond or any other mere promise to pay. A person who has not had such experience is apt to believe that he can figure out the values of such securities, this belief being based upon his lack of acquaintance with a great many of the factors that determine those values. The experienced investor also makes it his primary aim to obtain safety of principal, as he realizes what constant watchfulness it

requires to keep possession of the savings of past years, but the inexperienced buyer is principally intent upon purchasing something that will start him on the road to fortune. His primary aim is a big yield, because he is unaware of the big risk that goes with such a yield.

In brief, such are the inconsistencies of life, that those who cannot afford to speculate are the ones who do it, and those who can afford it are the ones who avoid it. At least the former put into highly speculative stocks and bonds by far the larger proportion of their total savings. Any person, therefore, in investing his savings should take into consideration, not only the bond house through which he deals, and the particular security he contemplates buying, but also his own personal qualifications for judging the values of securities.

In the Table of Contents, in Section II. is given a list of the leading classes of securities in the decreasing order of their safety and stability, so far as this order can be readily determined. Now the less one knows about securities the more he should confine himself to those at or toward the top of the list; and the more he knows about them the safer he is in going after the high yields shown by those toward the bottom of the list. In Section III. of the Table of Contents is given a list of ten principal classes of investors, the most expert being mentioned first, and the least expert, approximately speaking, being mentioned last. One who finds that he belongs to a class of investors mentioned in the latter part of the list of persons should generally confine his

purchases to the securities toward the top of the list of investments. Furthermore, as skill in judging stocks and bonds depends at least as much upon experience as upon mental capacity, one should not be too hasty in assuming that he is better qualified than the rest of his class.

To take a concrete illustration, any clerk or laboring man, however unacquainted with securities, is entirely safe in buying a United States bond, and is fairly safe in buying almost any bond belonging to any of the first six classes mentioned in Section II. If, however, in an attempt to tread the road to wealth, he spends his savings freely for common industrial stocks and mining stocks he is pretty likely to lose from 50 to 90 per cent. of his savings. Nothing requires more expert skill than to tell the difference between a good and a bad mining stock, especially if the stock be unlisted on any reputable exchange.

For these reasons the chapters in Section III. are devoted to suggestions as to what classes of securities different classes of people may wisely invest in. Furthermore, some rough suggestions are made for those who desire information as to the approximate percentage of one's total fund which may well be put into each class of stocks or bonds. It is recognized, of course, that stock and bond dealers are quite capable of handling their personal investments without any such suggestions; and yet a great many of them are inclined toward a degree of conservatism, which to them is unnecessary, and

which results in reducing their average percentage of income below what men of their ability and experience ought to be able to obtain. Therefore, without any pretence of superior knowledge or dogmatic certainty, the writer ventures these suggestions for all classes of people from highest to lowest.

The gradation of these classes of people or investors is, of course, merely approximate. There are for example, numerous trustees of estates possessing greater knowledge of stocks and bonds than numerous stock and bond dealers. Yet it is probably true that these dealers as a class have a deeper understanding of securities than the trustees of estates. It is impossible to draw hard and fast lines, and the aim of this section of the book is to prevent people, so far as is possible by mere writing, from losing money through the purchase of securities which they are not qualified to judge. The aim of the book is, in short, educational, and those who do not need any education in securities have no need either of this section, or of the book itself.

SECTION II
CLASSES OF SECURITIES

VI

United States Bonds

EVEN though the general interest in United States bonds is so very limited, they are worth the attention even of the relatively small investor, because of their great merit as a cash equivalent. It was observed in the chapter on Managing Investments that the saving to be made through holding bonds of extraordinary stability during bear movements and panics is exceedingly large. The possession of a cash equivalent—that is equivalent in stability—is therefore at such times a prime necessity to all those who are free to handle their securities as they like, and who wish to obtain the highest possible yield consistent with absolute conservatism.

For the small investor handling total funds of not more than a few hundred or a few thousand dollars, the natural cash equivalent is, of course, a savings bank account, or several of them if need be. Such accounts have the merit of drawing somewhat more interest than United States bonds, but they also have an important defect. This is that just when the wise investor wishes to purchase securities, in the very midst of a panic, funds deposited in a savings bank are likely to be unobtainable. In ordinary times these banks waive the right to require 30 days' notice or more, as the law may specify, but in

panic times they are much less likely to waive this right. Furthermore, no savings bank is as safe as United States bonds. The great desirability of making purchases in panic times is that good stocks then yield one to two per cent. above normal, good bonds three-quarters to one and a half per cent., and strictly high-grade bonds a half to one per cent. above normal.

United States bonds yield only about 2 per cent. less than the very best of all other bonds—namely, those of the individual States. In 1907, nevertheless, they depreciated 3 per cent. less, so that as a cash equivalent they have no equal. Considering both yield and stability, they are the best securities in the world to hold through a bear movement; and besides this, they have distinct advantages over a savings bank account. It is, therefore, very wise to invest in them, quite regardless of the low yield, whenever security prices become so high or general business so inflated as to presage a bear market.

Every class of bonds has what might be called its "fluctuating principle," by which is meant the principle, or economic factor, or business influence, in accordance with which the price moves up and down. The fluctuating principle of State bonds and the best municipals is the prevailing price of capital. When, for illustration, the actual average cost of new capital to municipalities and corporations rises from 4 to 5 per cent., there is a similar rise in the yield of these bonds, and a corresponding decline in their average prices. The fluctuating principle of a convertible is found in the movements of the

stock into which it is convertible; and that of a debenture is found in the earning power and financial strength of the issuing company.

But United States bonds possess a fluctuating principle all their own. This is due to the fact that most of them are used by the national banks as security for bank note circulation. The profits which the banks make upon this circulation increase when the interest rates for money rise, and decrease when rates fall. Thus it comes about that when interest rates are rising, United States bonds become more and more valuable to the banks, and vice versa. The fluctuating principle of these bonds, therefore, is the rise and fall of interest rates. This fact is clearly disclosed in the following parallel between the movement of interest rates and the movement of the prices of these bonds.

Year	Regs. 2s of 1930		Coups. 3s of 1918		Interest rates	Price of capital
	High	Low	High	Low		
1900.....	107	104	112 $\frac{1}{4}$	108 $\frac{3}{4}$	4.33%	....
1901.....	109 $\frac{1}{8}$	105 $\frac{1}{2}$	112	108 $\frac{1}{4}$	4.32	....
1902.....	109 $\frac{7}{8}$	108 $\frac{3}{4}$	110	105 $\frac{3}{4}$	5.03	4.08%
1903.....	109 $\frac{1}{2}$	106	110	106 $\frac{1}{2}$	4.77	3.30
1904.....	107 $\frac{1}{4}$	105	108	104 $\frac{1}{2}$	3.34	3.93
1905.....	104 $\frac{7}{8}$	103 $\frac{1}{2}$	106	102 $\frac{3}{4}$	4.25	4.04
1906.....	105 $\frac{1}{2}$	103 $\frac{1}{8}$	104 $\frac{3}{4}$	102 $\frac{5}{8}$	5.94	4.33
1907.....	109	104 $\frac{1}{8}$	106 $\frac{1}{2}$	100 $\frac{1}{4}$	6.16	4.53
1908.....	104 $\frac{1}{2}$	103 $\frac{1}{2}$	102	100 $\frac{3}{4}$	3.47	4.15
1909.....	102 $\frac{7}{8}$	100 $\frac{3}{8}$	102 $\frac{1}{2}$	100 $\frac{3}{4}$	3.52	5.03
1910.....	101 $\frac{1}{4}$	100 $\frac{1}{4}$	103	101 $\frac{1}{4}$	3.98	5.00
1911.....	101 $\frac{1}{8}$	100 $\frac{1}{4}$	102 $\frac{3}{4}$	101 $\frac{3}{4}$	3.07	4.89
1912.....	101 $\frac{1}{4}$	100 $\frac{3}{4}$	103 $\frac{1}{4}$	101 $\frac{1}{2}$	4.06	4.85

The tendency here displayed for these bonds to rise and fall with interest rates is very distinct, and the

rates given are the yearly averages for all money loaned in New York. The exhibit emphasizes the fact that the fluctuating principle is not the changes in the prevailing prices of capital. The price of capital, as here given, is the average yield shown by a large number of new bond issues floated in the United States each year respectively. From 1904 to 1907, for illustration, the price of capital was steadily going up, and yet United States bonds persistently advanced—whereas, the advance in the price of capital, had that been the fluctuating basis, would have carried them down.

At times such as 1902 and 1906, when overproduction and overconsumption are the rule and the general inflation of business foreshadows a bear movement, interest rates are always high; and consequently the prices of these bonds are high. At the very time then, when the investor should buy them to hold as a cash equivalent during a slump in security prices, their yields are the lowest. Instead of yielding from 2.1 to 3 per cent., their return at such times is only from $1\frac{5}{8}$ to $2\frac{3}{4}$ per cent. Furthermore, they are very difficult to obtain, because of the great demand for them as a basis for circulation or as security for United States deposits. Because of the substitution of federal reserve notes for the old bank notes, however, they will probably be easier to obtain at the top of the next bull market than they were in 1902 and 1906, and should also yield a little more. In spite of their low yield their stability makes them desirable as a cash equivalent at such times.

The distribution and uses of United States bonds at a date when both mercantile and financial conditions were approximately normal, namely October 31, 1912, were as follows:

Bond	Bonded Debt	Securing Circulation	Securing Deposits	Held as Investments
2s of 1930.....	\$646,250,150	\$601,762,600	\$12,516,700	\$ 49,970,850
3s of 1908-1918..	63,945,460	20,419,220	3,681,300	39,844,940
4s of 1925.....	118,489,900	26,817,000	3,741,000	87,931,900
Pan. Can. 2s 1906	54,631,980	52,684,280	1,468,500	479,200
Pan. Can. 2s 1908	30,000,000	28,574,180	657,000	768,820
Pan. Can. 3s 1911	50,000,000	.....	16,888,000	33,112,000
Totals.....	\$964,631,630	\$730,257,280	\$47,057,500	\$212,107,710

The great bulk of United States bonds are held by national banks, but considerable amounts are also held by other banks and investors. These other banks and investors have confined themselves principally to the purchase of the 3s and 4s, which show a larger yield. The above totals, which include not only the six items enumerated, but also some other smaller items, disclose the rather surprising fact that in October, 1912, when we were just in the beginning of a substantial bear movement in stocks and bonds, investors held as pure investments 212 million out of a grand total of 964 million United States bonds. Their usefulness was thus appreciated by a small but very shrewd portion of the investing public. Since then railroad stock prices have fallen from 120 to 87 3/8, and bond prices from 89.34 to 80.67.

While the Federal Reserve Act, then known as the Glass bill, was up in Congress, there was great danger

for a time that the circulation privilege would be taken away from the 2s of 1930, and no compensating advantage given. Had this been done it is probable that the investment value of these 2s, which constitute the bulk of all United States bonds, would have been lowered to 90 or 85. Before the bill became a law, however, it was so amended as to preserve the market for these bonds. It was provided that an amount equal to 5 per cent. of all the U. S. bonds deposited with the treasury as security for circulation might be retired each year. In exchange for them the holders are to receive one-half in one-year 3 per cent. gold notes of the United States, and one-half in 30-year 3 per cent. gold bonds—both without the circulation privilege.

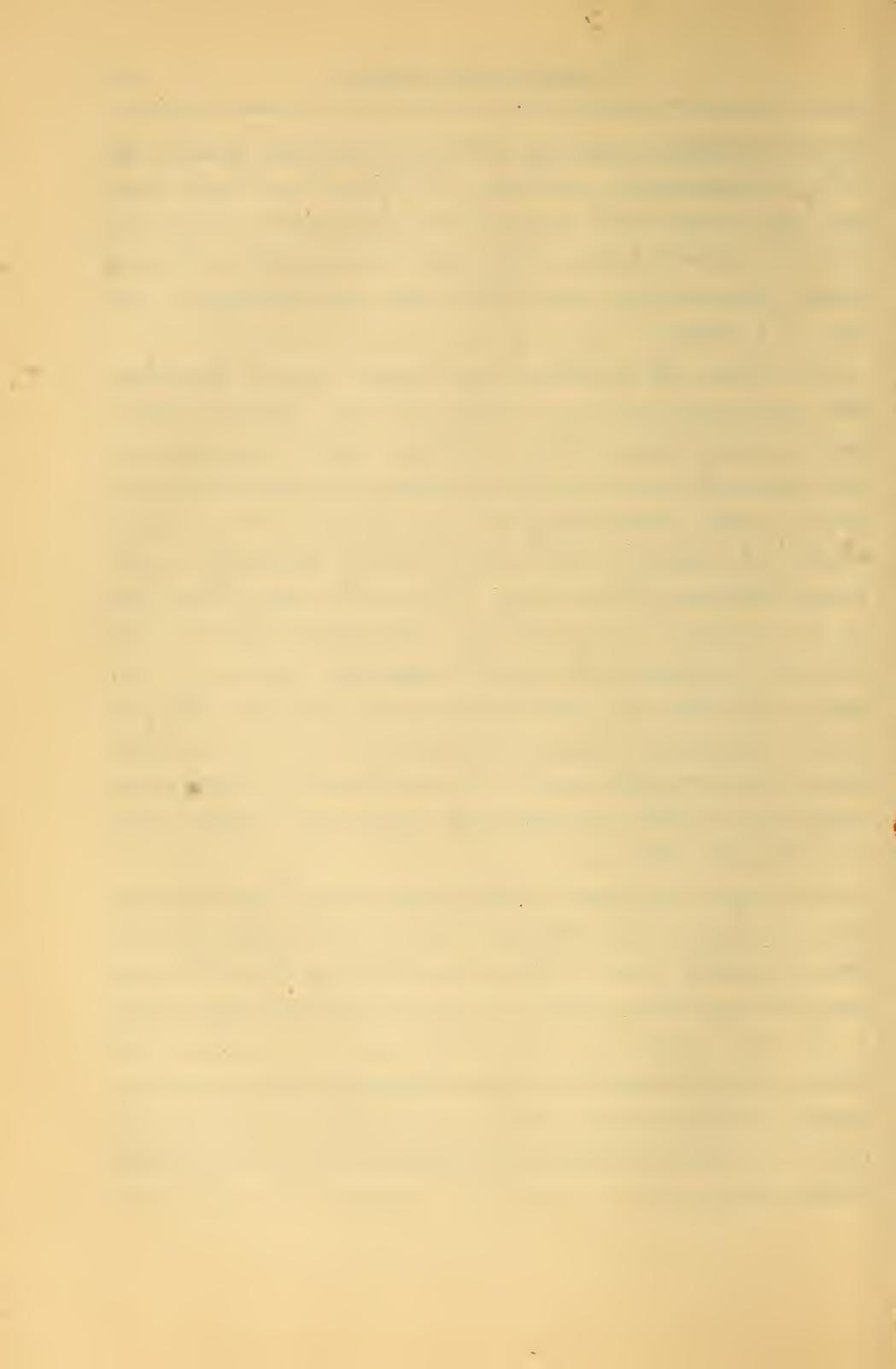
It is evident that the Federal Reserve Act did not seriously injure the position of the 2s. In January, 1912, when money was easy and bond prices generally were fairly high, these 2s were selling at $100\frac{1}{4}$; and in January, 1915, when money was easy but bond prices were generally low, they were selling around 99. Good mortgage railroad bonds on the latter date, not including the very best gilt-edged underlying issues, were selling about nine points lower than on the earlier date. The yield of the 2s had meantime risen only from 1.99 to 2.08 per cent.

A great many people have mistakenly supposed that the credit of the United States is a very great deal higher than that of European governments, and was so even before the war began. This was a natural inference

from the yields shown by various government bonds. In 1911, for example, our 2s of 1930 sold on 1.95 basis and the 4s of 1925 on a 2.69 basis, whereas the German 3s yielded 3.59 and the German 4s 3.92. French rentes were selling on a 3.14 basis, and British consols on a 3.15 basis.

The error of supposing that these figures represent the relative credits or standings of the various governments arises from failing to make due allowance for the value of the circulation privilege carried by United States bonds. According to an estimate of the Comptroller of Currency, the value of this privilege varied from 1.305 to 1.397 per cent. This is the net profit made by the national banks through the ownership of these bonds by means of issuing notes against the bonds. On the 4s of 1925 the profit varied from 1.124 to 1.301 per cent., varying according to the different prices at which the bonds were purchased. On the Panama Canal bonds maturing in 1936, the estimated profit varied from 1.322 to 1.438 per cent.

As a matter of fact, including the value of the circulation privilege, United States bonds have generally sold around a 3.65 basis. This is surely logical in view of the fact that interest rates in normal times average about 1 per cent. higher in New York than in London and Paris. The United States government is able to borrow money cheaply, simply because it has thrown the burden on the banks by virtually compelling them to own United States bonds.



VII

Other Government Bonds

ASIDE from United States securities the best bonds available to investors in this country, are, as a class, those of the various states. All the states in the Union in 1913 had aggregate indebtedness of only \$345,942,305, whereas the municipalities and minor civil divisions showed total debts of \$3,475,954,353. Because of this small indebtedness the credit of our states is very high, and for the same reason their bonds are much safer investments than the great majority of foreign government securities.

Discrimination should, however, be made amongst the several states. In general, those which are the most conservative politically have the highest credit, provided only the greater "conservatism" does not also mean more extensive political corruption and dishonesty—as it sometimes does. Those states in which extreme democratic, communistic or socialistic ideas generally prevail do not have, and are not entitled to, very high credit. The bonds of any state depend for their redemption on the legislature, and where the political complexion is very radical there is greater danger either of actual repudiation, or else of enactments which will directly or indirectly diminish the investment value of a bond.

Furthermore, the investor, if he be careful, will before buying a state bond write to its treasurer, or comptroller, or auditor, and obtain one or two of the official reports showing the condition of the state finances. The points which such reports should disclose are the following:

- (1) A condensed income and expense account, stating the cash on hand at the beginning of the year, the receipts, the expenses and cash at the end of the year.
- (2) A detailed income account subdividing the receipts according to sources of revenue, and including a statement of the assessed valuation of various kinds of property with the rates of taxation upon each.
- (3) A recapitulation of income covering a series of years, and subdivided by sources so as to show the variations in the burden and distribution of taxation.
- (4) A detailed expense account subdivided according to purposes of expenditure, and distinguishing clearly between outlays for current expenses and outlays for additional property or assets.
- (5) A recapitulation of expense covering a series of years, and itemized according to the things or services purchased, so as to show the change from year to year in the efficiency of administration.
- (6) A detailed statement of assets showing the

principal items such as land, buildings, public utilities, if any, securities held, and bank deposits.

(7) A detailed account of liabilities such as permanent and temporary debts, bills payable, unmatured interest, dues on contracts, and unpaid claims. This should include a debt statement showing the various maturities, and the purposes for which the debts were contracted.

(8) It should give a condensed balance sheet setting off against each other the principal items of assets and liabilities, and showing the net actual excess of the one over the other.

There is probably not a state in the Union that makes a clear and businesslike report such as this; but the more of these items contained, the more confidence the investor may have in the integrity and credit of the given state government. Some of the absolutely essential items are a debt statement and detailed accounts of income and expenses. As a general rule state bonds sell very close to their real values, reflecting pretty accurately the deserved standing of the state. Their yields vary from $3\frac{1}{8}$ to $4\frac{5}{8}$ per cent., and average about 4.26 per cent.

In the purchase of the bonds of foreign governments the risk is very much greater than in buying those of our states. This is true even of the Canadian provinces; but the general reason for it is that it is rather difficult for the ordinary investor to discover the real

condition of the finances of the foreign government. To judge of the value of its bond he should first learn its total indebtedness, and then divide that by its population to find its debt per capita. Where the per capita debt is high the credit of the given government should not be considered good unless the per capita wealth is also high. Data upon the latter point are rather difficult to obtain, and this is one of the obstacles to conservative investing in foreign government securities.

Indeed any thorough knowledge of debts is difficult to obtain, because in order to get at the real situation the investor must learn not only the amount of the debt of the central government, but also that of minor civil divisions such as cities, provinces, counties and the like. As between the central government and the minor civil divisions every nation apportions the powers, duties and liabilities differently, so that before one can intelligently understand the real position of a foreign government bond he must possess a broad and detailed knowledge of the government and its people.

Having learned the per capita debt the next thing is to find out the per capita wealth and income. In the United States it would take only about 18 per cent. of the aggregate yearly income of the whole people to pay off the entire indebtedness of all governments from that of the United States down to those of the smallest towns; and in Canada it would take about 27 per cent. Where these aggregate debts amount to more than 30 per cent. of one year's income for the whole nation, the

bond to be attractive should yield 5 or 6 per cent. or even more.

In determining these important points the investor should study such matters as productive industries, foreign commerce, railroads, volume of money and the like. Some of the authorities to be consulted are: The Statesman's Year Book, Whitaker's Almanack, the Statistical Abstract of the United States, the Statistical Abstract of Foreign Countries (published in London), the appendix to the Monthly Summaries of Commerce and Finance (published in Washington), Mulhall's Dictionary of Statistics and other works, and the latest encyclopedias. Those who trust wholly to the bond circulars and do not look up these points for themselves are apt to regret it; for it is the business of bond houses, after a reasonable investigation to make sure that the bond will be redeemed, to sell securities. It is not their business to inform the investor of the weak points in the financial condition of foreign governments, and they do not do it. Their descriptions are largely confined to the strong points.

Estimating the per capita income of any nation is a difficult procedure, but even without such an estimate, by a careful study of the above authorities one can obtain a fairly good notion as to the credit of a foreign government. Recently the per capita income of the people of the United States was estimated at about \$260, including men, women and children, and that of Russia at \$50. In their order from the

top down the earnings of various nations were ranked as follows:

1. United States	10. Norway and Sweden
2. Australia	11. Switzerland
3. United Kingdom	12. Argentina
4. Holland	13. Austria-Hungary
5. Germany	14. Portugal
6. Dominion of Canada	15. Spain
7. France	16. Japan
8. Denmark	17. Italy
9. Belgium	18. Russia

These estimates, even though not absolutely reliable, should prove useful.

VIII

Municipal Bonds

SINCE 1900 municipal bonds have assumed a degree of importance which was not dreamed of a generation ago. This lies not only in the total amount of the issues, but also in the large bank holdings of municipals, and in their popularity with investors. This popularity is based in part upon the very high average quality of the bonds themselves, but also in part upon the fact that they are free from the Federal Income tax and also from State taxation. They constitute practically one-third of the security holdings of all banks in the United States, and the amount issued averages about \$350,000,000 per annum.

These bonds are, moreover, among the most stable of all the securities from which the investor may choose; and the principal difficulty he encounters in making his selection arises from lack of generally accessible information regarding municipalities. Broadly speaking, the inquiries which he must make divide themselves into four groups: First, the industrial character of the municipality must be determined; second, its financial condition must be studied; third, its political character must be scrutinized; and fourth, the technical features of its bond issues must be learned.

Technical information is, of course, readily obtainable

from any good bond house; and from this source one can cover such points as the borrowing power of the given municipality, its debt limitations, and the question as to what extent its securities are exempt from taxation.

Political character is a more difficult subject to study; for upon this point accurate information is not obtainable, and it is necessary to lay aside one's prejudices as to party lines, and candidly inquire to what extent the city's credit is affected by the management of politicians. As there is no city which is entirely free from graft, and surely none which is free from serious charges of graft, made for political purposes, probably the best way to approach the subject is through an examination of municipal expenditures and their purposes. This can best be made by securing from the United States Department of Commerce and Labor a copy of the Bulletin entitled "Statistics of Cities" which is published yearly.

Since this bulletin shows the per capita expenditures of all leading cities for police and fire protection, health and sanitation, highways, charities and corrections, education, lighting systems, water supply, and other public purposes, it is not difficult to form a reasonably correct opinion as to whether the finances of the city in question are, or are not, managed for purposes of graft. Comparisons are made easy because all the figures are here given not only in gross amounts, but also upon a per capita basis.

The financial condition of the given municipality

should be judged principally from the rate of increase in its net debt, the percentage of yearly revenue to net debt, and the sinking fund provisions. Of these considerations the rate of growth in debt is by far the most important. The aggregate indebtedness of all cities in the United States increased from \$1,279,735,500 in 1902 to \$2,833,216,000 in 1912. The rate of increase since 1906 has been rapid, and the ratio of annual municipal revenue to indebtedness has fallen from 37.24 cents on the dollar in 1902 to about 30 cents at the present time. Therefore, other things being equal, the bond of a municipality whose indebtedness is increasing at less than this average yearly rate is the more desirable.

It is especially desirable that indebtedness should not grow more rapidly than revenue—except of course in the case of cities which are growing very fast in population, and are therefore in a similar position to that of an industrial company which is just erecting its plants, and is charging the cost of the same to capital account, with the full knowledge that about all to be required thereafter will be moderate yearly charges for maintenance and depreciation. Whether a city is, or is not, in this position should be determined by comparing its per cent. of increase in wealth and population with the average rates of increase; and these figures may be obtained from the Census Bulletins already referred to.

Other considerations bearing upon the subject of financial standing, are the relation of tax rates to true valuation of property and of the ruling rate of interest

in the given locality to the rate of income on the city's bonds. A municipality which sells its bonds at so low a price as to yield the investor an income materially in excess of the ruling local rate of interest on time money—taking the average rate of four or five years rather than of any one time—thereby concedes that its own credit is poor, unless there is some special explanation. Moreover, the bond of a city whose tax rate is high, as compared with the true valuation of its property, is somewhat the less desirable on this account, unless the rate of increase in per capita wealth is exceptionally high.

Industrial conditions, however, are by far the most important in judging the intrinsic values of municipal securities; and these can hardly be studied to advantage without first obtaining from the United States Census Bureau a comparative summary of manufactures by municipalities. These summaries show the growth in the manufacturing industries of all our cities of any consequence; and manufacturing forms a very important part of the total business of any city possessing any high degree of stability. If population is drifting away from a city because of the decay of its leading industry, or because the city has been sidetracked by the main channels of commerce, or for any other reason, this fact is pretty certain to be reflected either in a decline, or else in a slow rate of growth in its manufacturing business.

For example, an Ohio city, years ago, with a popula-

tion of 125,000 and a net debt of \$21.68 per capita, was selling its bonds on a 3.65 basis; while a Pennsylvania city having the same population, but having a debt of only \$7.68 per capita, was obliged to sell on a 3.90 basis. One would naturally expect the Pennsylvania city to obtain its money the cheaper, not only because of its smaller debt, but also because eastern cities, generally speaking, are able to borrow at lower rates than western. But upon inspection it is observed that from 1900 to 1905, the Ohio city's output of manufactured products increased from \$31,015,293 to \$39,596,773, whereas at the same time the Pennsylvania city's output decreased from \$24,741,837 to \$20,453,285.

Actual industrial growth is the most convincing proof of the value of a city's bond; but on account of their bearing upon future growth, the character of a city's industries, the stability of its population, and the question of its per capita wealth should be observed. Dependence upon a single industry is ordinarily undesirable, unless that industry is based upon some physical characteristic of the place, such for example, as the presence of great and inexhaustible coal mines, which renders the industry permanent. Stability of population is increased by diversity of industries; and a municipality which is a natural thoroughfare of commerce has a distinct advantage.

In interpreting these principles it is necessary to set up certain standards by which to judge. The question is constantly before us whether a certain amount of in-

debtiness is large or small, and whether a tax rate is high or low. These standards may be obtained from the aggregates for all cities in the United States. In 1912, the latest year for which complete reports are available, the assessed valuation of all city property was \$30,703,170,062, and its true valuation was probably about \$36,084,589,000. Outside of New York City municipal property is assessed at an average rate of about 75 per cent. of its true value, and this forms the basis of the estimate just given.

Therefore it appears that the aggregate municipal indebtedness of \$2,833,216,000 as of 1912 was equivalent to 7.85 per cent. of the estimated wealth. This being true, we may regard the debt as being small or large according as it is below or above 7.85 per cent. Outside of New York, the debts per capita averaged \$68.24, and this may be regarded as the standard. To include New York City in the average would lead to erroneous conclusions, not only because the wealth of New York is so vast as to inflate the per capita average, but also because its indebtedness is excessive and unrepresentative.

As to tax rates, the actual average for 1912 was \$18.34 on the assessed valuation of property, while the average on the true valuation of the same was about \$15.00 per thousand.

In examining bond circulars with a view to investing, careful observance must be made of the form in which the statements are given. During the past two or three

years an evil practice has grown up of stating the net indebtedness of a city as if it were the total debt, minus not only the sinking fund but also the water debt. Manifestly a water debt is, in the strictest sense of the words, a portion of the net debt, and to deduct it in this way is a mild form of misrepresentation, since it makes the so-called net debt appear less than it really is to the unobserving. The only deduction to be made in obtaining the net debt from the gross is the sinking fund.

Circulars which indulge in this practice should be further examined, especially for errors in population. As the Census is taken only once in ten years, population is estimated, and the per capita debt obtained by dividing the total by this estimate. It frequently happens that the estimates are much too high, thus making the per capita debt appear correspondingly too low. Recent and reliable estimates of population can usually be obtained from the Census Bureau at Washington.

Subject to these qualifications much of the detail of examining a municipal bond may be left to the bond house through which the purchase is made; and subject to the following principles the investor may often be contented to choose the bonds showing the higher yields. First, he must assure himself that the bond is legally issued, and is exempt from taxation. Second, the total per capita expenditures of the given municipality must not be so great as to indicate unusual extravagance. Third, the rate of increase in net debt should not exceed the average, and the percentage of yearly revenue to in-

debt should not decline unless there is some special justification. Fourth and most important, the city must show growth, as indicated by its population and its output of manufactured goods.

IX

Railroad Mortgage Bonds

RAILROAD mortgage bonds are very high grade securities, ranking but little, if any, below municipals. Indeed, until municipals were given the advantage of exemption from the Federal income tax, their superiority over railroad mortgage bonds was rapidly disappearing. It might not have been too much to say that first-class bonds of this type were actually as high grade as municipals. Because of this quality these bonds should invariably be bought for their safety of principal rather than with the idea of obtaining any high yield, or any material profit through appreciation in price.

In examining such bonds the first point to look at is the amount outstanding per mile of line. This throws much light upon the value of the given bond, because the typical mile of railroad line in the United States is intrinsically worth between \$50,000 and \$60,000. However, there are many single track lines which are not worth more than \$25,000 per mile, and some which are not worth more than \$10,000. On the other hand, there are double track lines built with 100 or 125 pound rails which are worth as high as \$125,000 per mile. Therefore the investor must look further.

In doing so a good map of the road is indispensable, since it is necessary not only to learn whether the mile-

age covered is main or branch lines, but also where it is located. If it is a mere spur reaching to some unimportant town or district, it may not be of much value. Furthermore, if this spur or short branch line happens to be held under a terminable lease, or by stock control, it might be lopped off any time. The lease could be terminated, or the stock collateral could be sold.

Thus it is very important, even after knowing the location of the mileage, to know also the earning power of that particular mileage. This is difficult to get at, since gross and net earnings are not subdivided by branches, or by mortgages; but one can obtain some idea by finding from any good Atlas the names of other roads operating in the same locality, and then by learning from the financial manuals the per mile earnings of these other roads.

Another good method is to visit some large library, and learn if possible from the old financial manuals how much this particular branch line earned before it was absorbed by the parent company. If even then the investor is doubtful, he has still another resource. Quite a number of states have made valuations, or other exact records, regarding the railroads within their borders, and by writing to the Secretary of the State in which the line is located, one may often obtain much valuable information as to the traffic, road bed, the kind of ballasting used, the weight of the rails, etc.

Accepting as final the opinions of one's bond house regarding these details is an error, because the very

purpose of making a personal examination is to guard, not against dishonesty, but against the mistakes of the bond houses. If the bond house did not believe in the bonds, it would not risk its reputation by floating them; but even the best houses can, and do, occasionally make mistakes. Furthermore, there has grown up a practice, due probably more to the issuing corporation than to the bond house, of misusing the high credit of strong railroad corporations in the flotation of new issues. The misuse referred to consists in floating a second mortgage or other junior bond at the price of a first mortgage.

The credit of some railroads, because of their large earnings, is so high that even a second mortgage may be floated around a $4\frac{1}{4}$ per cent. basis. This, however, is not fair to the investor, because there may later on be issued enough junior obligations to absorb the bulk of the surplus earnings remaining after the payment of existing fixed charges. When this happens such a second mortgage bond is bound to sell strictly upon the merits of the security behind it, and to fall 5 to 15 points below the high flotation price.

Whether the given mortgage is open or closed is also an important matter. For example, the Atlanta and Charlotte Air Line Railway Company, which is a leased line of the Southern Railway, sold in 1915 \$3,500,000 first mortgage bonds, Series B, due July 1, 1944. In June, 1914, \$5,500,000 of these were sold, so that \$9,000,000 are outstanding, and the authorized issue is

\$20,000,000. The mortgage covers 263 miles, so that the amount per mile is \$34,200. If this were all that would ever be issued, the bond would be high grade, but as the mortgage is open the balance may be issued, raising the debt per mile to \$76,000, which is probably at least \$25,000 in excess of the value of the mileage.

Because of the uncertainty as to how long the margin of safety, or the excess of net income over charges, will remain wide enough to render this bond high grade, the investor needs to watch the income accounts from year to year. Herein lies another weak point in the bond, since it is impracticable to do this. Being a subsidiary leased line, with practically no individuality of its own, the manuals contain no separate income account, and it would be almost impossible to learn from year to year how the course of earnings may affect the value of this bond. Furthermore the parent company makes heavy charges against this subsidiary for hire of equipment. These are included under the heading "other deductions;" and in 1914, although gross earnings increased only \$16,630, these "other deductions" increased by \$104,693. There is then no certainty at all that these bonds will be able to maintain their original market value.

Many of the bonds issued nowadays represent mixed mortgages, being secured partly by first mortgages, and partly by second or third, and sometimes partly also by various collateral. In such a case the difficulty of estimating the worth of the bond is great. The method to be fol-

lowed is to first estimate upon the mileage basis the total value of all the property covered by all the mortgages under the bond. Then look up all the prior liens and deduct their amount from the gross valuation. In this way the amount of property behind a given bond can be estimated. Collateral security, unless it consists of stocks and bonds for which genuine quotations can be found, should be largely ignored, as a great deal of collateral held in corporation treasuries has merely nominal values.

Another question to be examined is whether the given mortgage is a direct mortgage on the physical property itself, or merely a mortgage on the stocks which own the physical property. A direct mortgage is, of course, quite superior to a collateral mortgage. Besides this, it is important to know whether the bond is a direct obligation of the parent company, or an obligation of one of its subsidiaries. Obligations of subsidiary companies are greatly inferior unless these subsidiaries make separate annual statements of earnings, assets and liabilities. Still further, one should learn if possible whether the mortgage covers merely the road bed, or covers also various terminal properties and the equity in equipment.

Guarantee should not be valued too highly as an element of value. A great many subsidiary bonds are guaranteed as to interest, or as to principal, or as to both. However, the strength of such guarantees depends upon the indenture, and this strength is in itself a complicated legal question which the investor cannot

pass upon. Hence, such guarantees, unless made absolute by endorsement, should be generally distrusted to the extent that the investor should be unwilling to pay more than a few points more for a guaranteed bond than he would pay for the same bond if it were not guaranteed. There have been quite a number of instances in which supposedly iron-clad guarantees have proven practically worthless because of some legal technicality, or of some unobserved clause in the indenture.

Divisional liens are also to be examined with scrupulous care before purchasing. For illustration, the Central Branch 4s due 1919, were supposed until some time in 1914 to be a high-grade mortgage bond. They were a mortgage upon the former Central Branch Railroad, which is now a division of the Missouri Pacific Railway Company. Under the reorganization plan of 1915 the holders of these 4s were offered 50 per cent. in new general mortgage 4s and 50 per cent. in either the new 5 per cent. preferred stock, or else the new 5 per cent. income bonds. It thus appears that the Missouri Pacific Railway Company did not after all absolutely assume the liability for these 4s in an unqualified way. Hence, instead of being a strictly high-grade first mortgage bond, they were the equivalent of a debenture, and far from being worth 95 to 98, they were worth only 75 to 80.

To the investor who desires to avoid such issues, the only answer is that there is no sure method except to discontinue the purchase of divisional mortgage bonds.

In the case of a bond which is a mortgage not on the entire road, or on an entire subsidiary operating company, it is impossible to obtain a separate income account or balance sheet. No road makes a separate statement of the assets or earnings of each of its divisions. Hence it is impossible to find out what the division is worth per mile, or whether the bond is really secure or not. At least it is impossible for the average man because he has not the time either to go over the division, or to employ engineers to do so. Neither is it practicable for the ordinary investor to obtain a complete copy of the indenture of the bond, or to find out what it means if he has it. To do so would involve very heavy legal fees.

At best the buyer of a divisional lien takes a chance. In taking this chance two of the best practical safeguards are, first, to subdivide the investment so as not to lose heavily on any one bond; and second, to recognize the ever-present uncertainty as to whether a divisional lien is the more like a first mortgage bond fully secured by assets, or the more like a debenture resting merely upon the credit of the road. In the case of small divisional liens especially, it is a safe practice to sell out whenever net income fails to exceed total charges by more than 25 per cent.

Notwithstanding the many possibilities of loss which have been pointed out, first mortgage railroad bonds are, as a class, very reliable. It is because of their high reputation that the temptation is so great to represent a

railroad bond as a first mortgage issue, even when there is some serious defect in it. However, if one is going to invest money blindly, and without examination, he will lose less in first mortgage railroad issues than in any other class of bonds except government and municipal bonds.

X

Gas and Electric Light Bonds

PUBLIC utility securities have recently enjoyed a considerable boom. First, in the early history of this country, we had our boom in bank stocks, and it was generally thought that all one had to do to get rich was to buy such stocks. Next came the boom in canal stocks; and after investors had lost a few hundred thousand dollars in learning the lesson that the canal business was not all profit, they applied this same fallacy to railroads. For many years up to 1873 it was widely believed that railroad maintenance expenses amounted to practically nothing, and that the surest way to get rich was to buy railroad shares. Then along came the street railways; and their promoters spent so little on way, structures and equipment that all three were soon worn out. Besides that they made insufficient allowances for operating expenses, interest and depreciation, and capitalized the new concerns on the theory that there wasn't really much difference between gross earnings and net income. The street railways have been ten years recovering from this error, and they haven't fully recovered yet.

Next came the other public utilities, and the same error which has been repeated by other generations of investors is re-enacted in these securities. Experience

is the great teacher, but the lessons are never inherited, each generation having to learn its own. This is why so many investors have since 1912 been caught in the securities of the American Water Works and Guarantee Company, and in other similar securities. Every boom has its reaction, and the boom in public utility flotations can hardly prove an exception. However, all that the investor needs, to avoid such losses, is exercise of discretion.

Of all the classes of securities included under the general name "public utilities," gas company bonds are probably the most seasoned and stable. Seasoning does not necessarily require age, and we have scores of new railroad bonds which are just as well "seasoned" as some of those which are twenty or thirty years old. Seasoning is a question of standards, and the railroad business has been thoroughly standardized. We have had so much experience that we know how much it will take to build the roadway and terminals; how much gross per mile the new road running through a given country with a given density of population will earn; how much of this can be saved for net and surplus; how much must be allowed for interest and depreciation; and at what figure the whole project can be safely capitalized.

With a lot of public utility concerns we have not had enough experience to know such essentials as these; and without knowing them the stocks are very apt to prove worthless, and the bonds of doubtful value.

With gas bonds, however, we have had great experience, and the standards are pretty well developed, so that managers and promoters know just about what it is practicable to accomplish in any locality. These standards were fairly well disclosed by the compilation given in Poor's Industrial Manual of 1910 regarding light, water and power companies; for with gas companies, which are included under this heading, the principles and relations are about the same.

Capital stocks	\$2,108,233,079
Funded debts	1,392,653,050
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Total capitalization	\$3,500,886,129
Gross earnings	285,486,342
Operating expenses	157,601,329
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Net earnings	\$ 127,885,013
Interest paid	36,135,538
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Surplus	\$ 91,749,475
Dividends reported	45,047,938
Other deductions	14,343,871
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Final surplus	\$ 32,357,666

The earnings account applies only to companies making complete returns; and the capitalization of these amounted to \$1,869,339,018, of which \$1,128,860,168 consisted of stocks and \$740,478,850 of bonds. The average rate of interest paid for all companies was 4.97 per cent., and the average dividends 3.03 per cent. For the companies making complete returns the percentage of gross to capitalization was 15.27; net to capitalization 6.84; expenses to gross 55.20; interest to bonded debt

4.88; and dividends to capital stock 3.99 per cent. Additional comprehensive information, this exclusively about gas companies, was given in the Census Bulletin of 1910. From it the following showing was obtained:

ITEMS	1909	1904	% GAIN
Capital invested	\$915,537,000	\$725,035,000	26
Cost of materials	52,428,000	37,180,000	41
Salaries and wages	33,316,000	25,522,000	31
Other expenses	27,757,000	29,557,000	
Total expenses	113,501,000	92,259,000	23
Value of products	166,814,000	125,145,000	33
Net earnings	53,313,000	32,886,000	62
Per cent. on capital....	5.82%	4.54%	
Gas—cubic feet	150,835,793	112,549,979	34
Value per foot	\$1.106	\$1.112	

The average price of gas did not increase, and the total output expanded only 34 per cent., whereas the urban population of the United States during this time increased 39 per cent. There was, therefore, no over-consumption; and this business, unlike many others, did not become inflated during those five years. Moreover net earnings increased 62 per cent., although the gross output grew only 34 per cent., and the price of gas fell slightly. Efficiency of operation, therefore, improved. Still another significant point is that wages and salaries increased less than gross business, and only half as much as net earnings, whereas in the case of railways and many other corporations wages and salaries are growing more rapidly than either gross or net.

Earnings presumably available for dividends averaged 5.82 per cent. in 1909, against 4.54 in 1904; and this contrasts sharply with the decline of net railroad

earnings from 5.19 per cent. in 1904 to 4.74 per cent. in 1909. Using the foregoing and other figures as a basis for general conclusions, it is found that as a rule lighting and power companies have an asset value equal to about 5.4 times their yearly gross earnings, or 12.1 times their yearly net earnings. Their capital stocks upon the average are intrinsically worth about 15.0 times their yearly surplus earnings.

Two primary essentials which every investor should insist upon before buying a stock or bond are, first, an *income account*, and second, a *balance sheet*. In the case of a holding company, both of these should be consolidated accounts, including all the subsidiaries. Some holding companies give a consolidated income account, and a so-called general balance sheet, but do not give a consolidated balance sheet, and therein lies the difficulty. Some such companies have gone into receivership simply because the bills payable of the subsidiaries were accumulating, whereas the bills receivable were remaining at a standstill. These changes investors are not aware of, because of the absence of a consolidated balance sheet and of the fact that the financial condition of the subsidiaries is therefore unknown.

It is not mere professional interest in the study of finance which compels one to urge that investors should not buy the securities of companies which do not issue satisfactory income accounts and balance sheets. On the contrary, to invest in such securities is likely to be gambling of the blind pool type. It is not even good

speculation; for in speculation one buys a chance, knowing it is a chance, and does so in the hope that the wheel of Fortune will turn in his favor. In buying these securities, however, one may get something not as good as a chance, because in the first place he does not know what it really is; and in the second place the wheel of Fortune cannot turn in his favor, because even if such a bond or preferred stock happens to be a real security, instead of mere capitalized possibilities, its income is limited and there is no chance of large profit in it.

With electric lighting companies there is very little for the investor to judge from, because a relatively small proportion of the total value of the typical company lies in its physical properties. A large proportion lies in the franchises which confer a sort of a legal monopoly, and in the earning power derived from this partial monopoly. Even the earnings are often ambiguously stated in the annual reports, because of the fear that to disclose a large income would lead to municipal interference. Hence the investor in analyzing the bond of an electric lighting or gas company has to meet considerable difficulties.

In meeting these probably the best standards by which to judge are to be obtained from the census report of 1912, and from a compilation of light, water and power company statistics found in Poor's Industrial Manual of 1910. The value of the census figures is greatly diminished by the inclusion of a lot of insignifi-

cant companies whose capital stocks are practically worthless; but by checking up the two sets of figures against each other, we may obtain some valuable conclusions and learn how to test the true worth of a light and power bond. Some of the more significant figures based in part upon Poor's compilation regarding electric light and power companies are the following:

Bonded debt at par	\$740,478,850
Preferred stocks at market value	138,172,480
Common stocks at market value	669,301,220
Gross operating earnings	285,486,342
Net earnings	127,885,013

The market values of the capital stocks are here partly estimated; and upon this basis the total intrinsic worth of these companies which made full reports for 1909 was \$1,547,952,550. This embraces the aggregate values contained in both bonds and stocks. Now, comparing these values with gross and net earnings, they are found to be equivalent to 5.42 times the gross earnings, or 12.10 times the net earnings. The surplus earnings shown evidently contained a good deal of duplication, or else were figured by the individual companies included, without making proper allowances for depreciation. In any event, they were manifestly too large, and cannot be used as a basis for valuations. Meanwhile, some of the more important points to be learned partly from the Census compilation of 1912 were the following:

Bonded debts at par	\$ 897,907,681
Preferred stocks at market value.....	119,500,000
Common stocks at market value.....	572,000,000
Total intrinsic value	1,589,407,681

Total gross income	\$ 302,115,599
Urban population of United States.....	29,230,579
Horse-power installed, above companies.....	7,528,648
Output in kilowatt hours.....	11,502,693,006

The maximum amount of bonds which could be issued by these companies, would be less than the above estimate of total intrinsic value because the common stocks taken even at their market values, contain a good deal of water. A considerable portion of the market value of a common stock represents voting power, franchises, expected future earning-power and the like. It is perhaps a fair estimate that one-half of the market value of the common stocks should be deducted in estimating the maximum amount of bonds which could properly be issued in the event that all these companies were to finance themselves almost wholly with bonds. This, of course, is a mere hypothesis, but it is useful in learning to distinguish those individual companies which have bonded debts in excess of the total value of all their tangible assets. In brief, we arrive at the following conclusions:

Ratio of tangible and intangible assets to gross.....	5.4
Ratio of all said assets to net earnings.....	12.1
Ratio of surplus earnings to true value of stocks.....	15.0
Tangible assets per capita of population.....	\$ 44.60
Tangible assets per 1,000 kilowatt hours.....	\$113.30
Tangible assets per horse-power installed.....	\$173.10

In examining the value of a given bond, the first thing to do is to learn the approximate total value of the property. After this is done, one may readily deduct the prior obligations and learn how much is left for the

given bond issue. If gross, net and surplus earnings are clearly stated, it is an easy matter to form a very good estimate. One should take as a basis either the average earnings of a series of three to five years, or else the earnings of a very typical year. Then the process is this:

Gross earnings times 5.4 equals.....	Total Assets
Net earnings times 12.1 equals.....	Total Assets
Surplus earnings times 15, plus bonded debt equals.	Total Assets
Average of these three equals.....	Final Estimate

In the third of these three estimates, the bonded debt should be figured not at par, but rather at the ruling prices of the individual bonds which make up the debt. It should be borne in mind that these total assets include intangible values, so that not all of them form a proper basis for the issue of mortgage bonds. Having reached this final estimate it is an easy matter to get at the position of a new bond. If, for example, a given company is found to have total assets, as above estimated, of \$10,000,000; and if it has outstanding \$5,000,000 of bonds which constitute prior obligations to the new issue, and if the new issue itself is \$2,500,000—then there are about \$5,000,000 of assets, tangible and intangible, to secure this new issue. Hence the new issue should prove a very good debenture.

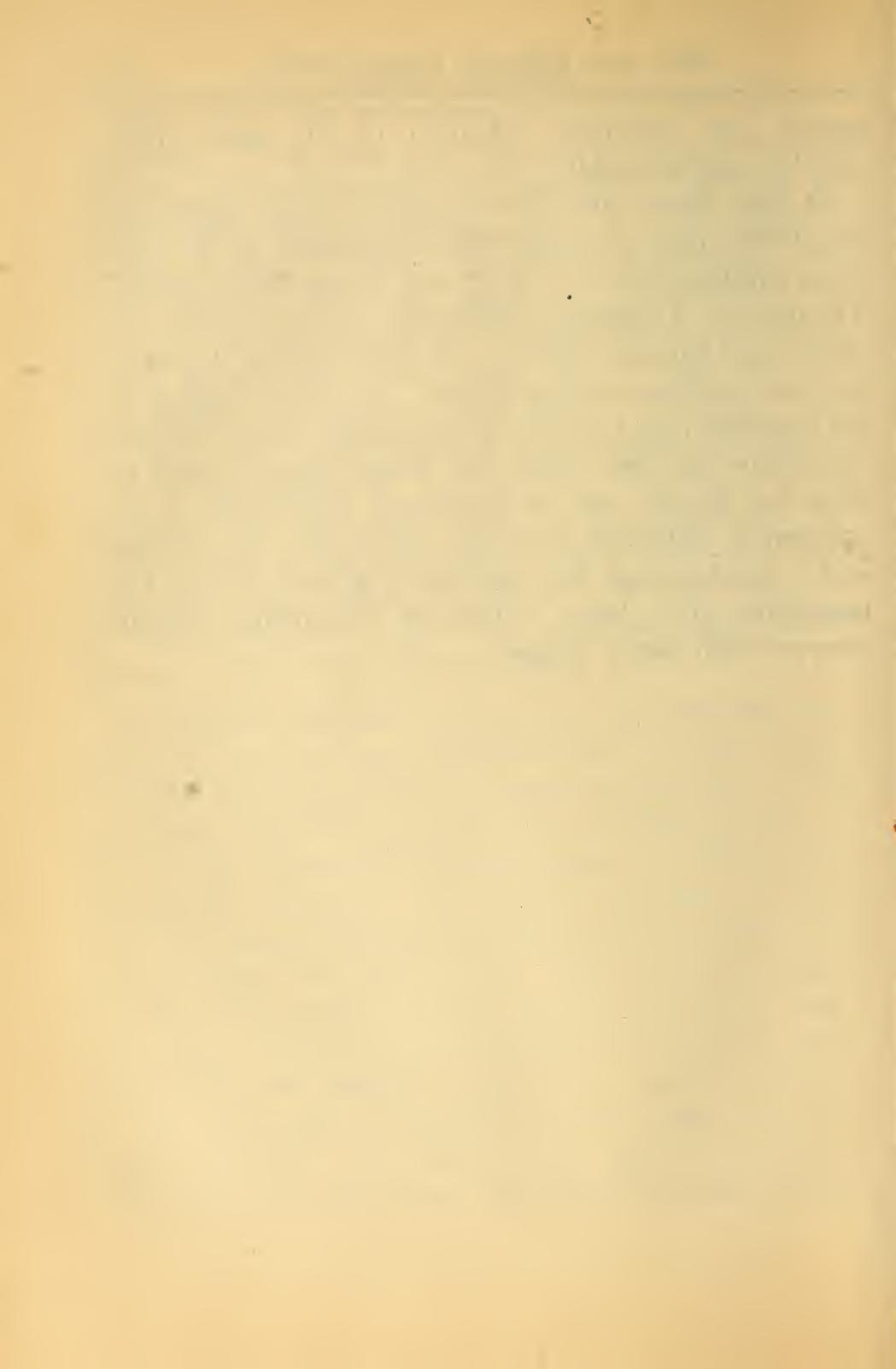
But if this new issue is put out as a mortgage bond, the investor should regard it, upon these figures, as a sort of a hybrid half way between a mortgage and a

debenture. That is to say, from 20 to 40 per cent. of lighting and power assets are intangible, and form no proper basis for a mortgage. It is only the physical assets, including plants, equipment, inventories, cash and the like, which are capable of becoming real security for a mortgage bond. Supposing the intangible assets in this case to be 25 per cent. of the total, the mortgagable total assets would then be \$7,500,000 and the new issue of \$2,500,000 would be covered by assets only to the extent of its par value, whereas a good mortgage bond must have behind it 125 to 150 per cent. in the shape of tangible assets. Such a bond as this, then, instead of selling on about a 5 per cent. basis, as it would if it were a good first mortgage bond, should sell on a 5½ or 5¾ per cent. basis.

If, however, statistics of gross, net and surplus earnings are not available, estimates must be very vague. Tangible assets may then be regarded tentatively as the equivalent of \$44.60 per capita of population served, or \$113.30 per thousand kilowatt hours, or \$173.10 per horsepower installed. The amount of error in these rough estimates depends upon the question whether the given company is typical or not. These are the averages for the United States, and are true for the typical company only. However, any estimate at all is better than none at all; and indeed if a company is bonded in excess of the total assets indicated by these rough tests, its bonds are not to be considered as good investments. This is true, for the reason that these are tests for ob-

taining the maximum valuation of all assets, both tangible and intangible.

A much better rule than to trust to these vague and inaccurate tests—meaning those mentioned in the previous paragraph only, is to let such bonds alone entirely. The bond of a company which does not give income accounts and balance sheets is no fit investment for anyone but insiders and speculators. So-called insiders in the company may properly invest in such issues, because they know the facts which the annual reports ought to show but do not; but for the general public there is no substantial difference between speculating and buying such a bond, except that speculating at least affords the possibility of a large return on the money risked, whereas such bonds do not.



XI

Equipment Trusts

EQUIPMENT trust notes were once a makeshift, but they have come to be one of the most regular and approved types of securities, and their advantages are still unappreciated. They had their origin back in the seventies in the embarrassed condition of the railroads, which followed the panic of 1873. Many of our roads then found themselves short of the necessary equipment to handle the traffic, and not in such financial condition as to enable them to buy outright. They therefore adopted the expedient of buying on what was practically an instalment plan, paying 10 to 25 per cent. in cash, and giving for the balance notes which matured serially over a period of years.

In the beginning, therefore, the issue of "car trusts," as they were then called, was properly taken as indicating an impoverished condition. These notes for the balances due were disposed of by the equipment makers for what they would bring. They were a sort of an emergency paper, which often sold far below par. It was in this way that car trust obligations at their very origin fell into disrepute.

These notes, however, were not really "car trusts" or "equipment trusts" at first, because they were unsecured. Later the practice developed of withholding from the

railroads the title to the equipment bought until fully paid for. Under this plan a trust was created to hold the title, a trustee appointed, and a trust agreement drawn up under which the trustee held the title until the serial payments were completed and the railroad became the full owner of the equipment. It is the present practice to transfer the equipment to the trustee, who in turn leases it to the railroad, until the latter acquires the title to it by completing the payments.

These bonds and notes are one and the same thing, generally speaking; for whatever is the name by which they are called, the security to the investor is the mortgage held by the trustee upon the equipment. A railroad cannot do business without engines and cars, and as it does not own these until the payments are completed, the trustee, theoretically at least, can take them and sell them to another road if payments are not continued. Hence it is that the security of a regularly drawn equipment trust bond or note is unlike all the other obligations of the railroads in that this security is largely independent of the financial condition of the road using the equipment.

In its regular form such an obligation runs for ten years, and is extinguished by twenty semi-annual payments. The amount paid down by the railroad, when it leases the equipment from the trustee, is 10 per cent. or more. The *average* actual life of the bond or note, therefore, is about five years instead of ten. However, until the payments are completed, the mortgage held by

the trustee for the bondholders covers the entire amount of equipment originally bought, so that it is a peculiarity of these bonds or notes that the longer they have run the more secure they are. Theoretically, these twenty semi-annual payments merely cover the depreciation of the equipment; and according to this theory, the latter has no commercial value at all at the end of ten years. But in fact the payments much more than cover the depreciation, and the life of the equipment is a great deal longer than ten years.

There are no accurate and comprehensive statistics of the life of equipment. However, during the past eleven years the average number of freight cars scrapped each year was equal to about 3.717 per cent. of the total number in service. The number of locomotives scrapped during the same period was about 4.557 per cent. of the total number in service. Upon this basis the average life of a freight car figures out 29.5 years, while that of a locomotive figures 21.9 years. Moreover, these averages relate principally to the kind of equipment which was being made ten years ago or more, when there were almost no steel cars in service, and the engines were lighter and much less durable than those now made. On the other hand, both cars and locomotives cease to have much, if any, sale value a number of years before they cease to be of considerable practical use to the road owning them.

Summing up, it is a fair statement to say that the actual life of such equipment, as is now bought, is 17 to

20 years, whereas the equipment trust bond issue of the typical sort is half extinguished in five years, and fully paid off in ten years. If \$11,000,000 equipment trust bonds be issued for the balance, the increasing degree of security of the bonds outstanding may be approximately stated without going into exact refinements as shown below. It is here figured that the average life is 17 years, which is surely a moderate basis of calculation, in view of the fact that the actual life even of the old-style equipment was from 21 to 30 years.

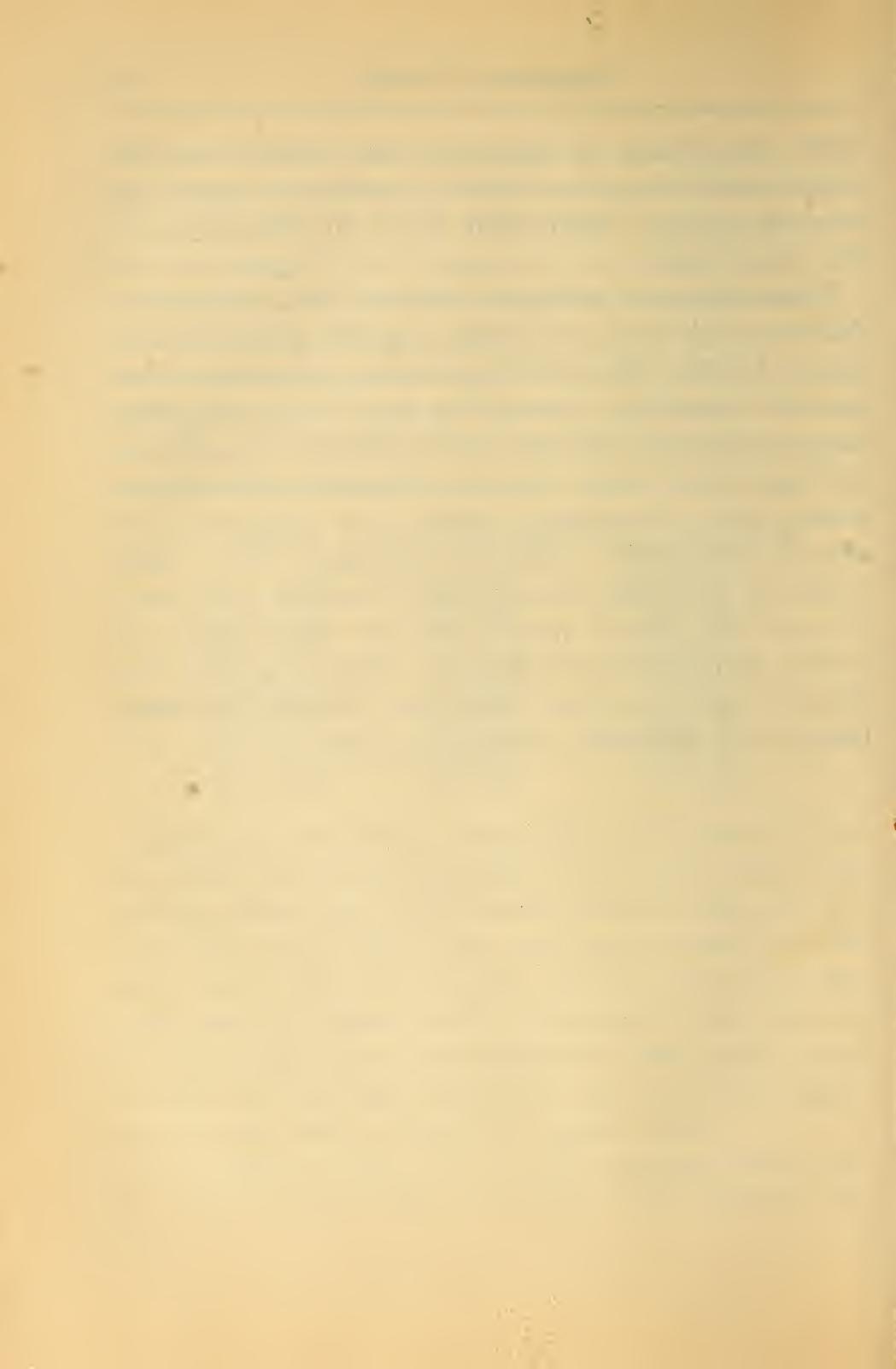
At End Of	Equipment Bonds Outstanding	Value of Equipment Behind Them
1st year	\$9,000,000	\$9,411,765
2nd year	8,000,000	8,823,530
3rd year	7,000,000	8,235,295
4th year	6,000,000	7,647,060
5th year	5,000,000	7,058,825
6th year	4,000,000	6,470,590
7th year	3,000,000	5,882,355
8th year	2,000,000	5,294,120
9th year	1,000,000	4,705,885

Upon the basis of an average life of 17 years, therefore, and of an issue maturing serially in 10 years, the security behind each \$1,000 outstanding is about \$1,411 at the end of the fifth year, and approximately \$1,960 at the end of the seventh year, while at the end of the ninth year it is about \$4,705. Because of this feature, it is practically safe to buy equipment trust bonds, even of roads of very poor credit, provided one first makes sure that the bond is issued in regular form.

As a matter of fact, in the whole railroad history of the United States, there are only a few instances in

which the holders of equipment trust bonds have lost money; and it has now become a matter of course for railroad receivers under court orders to ultimately protect these issues.

Thus experience indicates that for the investor who desires a high degree of safety, together with a fair income of about $4\frac{3}{4}$ to $5\frac{1}{2}$ per cent., equipment trusts are very desirable. Considering both safety and yield, they are generally somewhat more desirable than railroad mortgage bonds except that it is necessary with them to change one's investments oftener. As compared with second mortgages, collateral mortgages and small divisional liens, they are preferable in almost every way. In spite of all the recent railroad receiverships the holders of equipment trusts have suffered but very few defaults, and even those which have defaulted are very likely to be ultimately redeemed at par.



XII

Street Railway Bonds

STREET railway bonds as a class have thus far been inferior to steam railroad bonds, for the reason that, generally speaking, the finances of traction companies are not in a very strong condition. Nevertheless, the bonds of the strongest traction companies are almost equal in quality to those of the best steam railroads; and the mere fact that a bond is issued by a street railway is no proof that it is not of the highest quality. The chief difference is that whereas there are a great many first mortgage steam railroad bonds which are absolutely secured by physical assets, the street railway bonds of similar quality are decidedly in the minority.

One of the principal weaknesses of street railways is lack of working capital. Steam roads, as a rule, carry substantial amounts of cash, together with inventories, supplies, bills receivable and the like. These current assets exceed current liabilities by the equivalent of about 30 per cent. of yearly gross earnings, while the typical street railway has almost no excess of current assets over liabilities.

This lack of working capital is in general due to the necessity of continuous expansion. The typical American city increases its population about 40 per cent. every

ten years, and this necessitates large expenditures for new trackage and equipment on the part of the street railway. Hence, surplus earnings and working capital are always being spent for permanent improvements, such as tracks, equipment, etc. Steam roads are able to finance their improvements more largely out of new security issues, because they have earning power enough to pay the interest on the new issues.

The greatest disadvantage of the street railway is the fact that its business consists almost entirely of passenger traffic. Such business, even for the steam roads, is much less profitable than the freight traffic, principally because there is a more continuous and persistent downward pressure upon passenger fares. The voter, who ultimately controls railroad and public service commissions, does not particularly care what the freight rate on coal or wheat is, because these freight charges which he pays are concealed in the retail prices of coal, flour and bread. But he does care about passenger fares, because these he pays directly out of his pocket money. This no doubt explains why in a recent year the steam roads of the United States earned 7.01 per cent. on the net capitalization, whereas the street railways the same year earned only 4.3 per cent.

For the investor the chief weakness in street railway bonds is that the bonded debts are too heavy. In 1912 the aggregate tangible and intangible value of all street railway property in the United States was about \$3,313,-000,000, while the bonded debts totalled \$2,329,-

000,000, so that the bonded debts represented more than 70 per cent. of the total values. Furthermore, probably not less than 30 per cent. of these total values consisted of franchises, voting power and other intangible elements. Hence it is not too much to say that the bonds outstanding equalled or exceeded the entire tangible assets of the street railways.

These considerations should by no means drive the investor away from street railway bonds, for among them there are many excellent issues. Especially is this true of some of the underlying bonds of companies like the Interborough Consolidated of New York, the Public Service Co. of New Jersey, the Twin City Rapid Transit Co., Detroit United Railway and the Boston Elevated Railway. The foregoing are merely sound reasons for the exercise of caution.

The tests to be applied to a street railway bond are similar in kind to those outlined for electric lighting bonds in Chapter X. Some of the more essential figures largely derived from the census report of 1912 are the following.

Bonds at par	\$2,329,221,828
Preferred stocks at market value.....	294,451,000
Common stocks at market value.....	689,633,000
Total tangible and intangible assets.....	3,313,305,828
Gross earnings	585,930,517
Net earnings	253,034,161
Surplus earnings	61,910,753
Number of passenger cars	76,162
Miles of track	41,064

At par values the capital stock consisted of \$1,970,-

385,000 common; and \$408,961,300 preferred, and the market values above are partly estimated of necessity. An estimate is necessary by way of eliminating the water from the aggregate valuation of street railway properties. Net and surplus earnings in these Census figures are not computed by just the same methods as is usually done in corporation reports, so that some of the conclusions drawn below do not entirely agree with these figures. However, the chief points by which to test street railway bonds are the following:

Ratio of tangible and intangible assets to gross.....	4.7
Ratio of all said assets to net earnings.....	11.5
Ratio of surplus earnings to true value of stocks....	15.0
Tangible assets per capita of population served.....	\$101.60
Tangible assets per mile of track.....	\$72,290
Tangible assets per passenger car.....	\$38,990

The first three of these tests refer to both tangible and intangible assets combined, and therefore obtain valuations which should cover both bonds and stocks; but the last three refer to tangible assets only, and the valuations obtained might properly be represented by bonds only, provided some of these be debentures. The methods of using these tests, and the considerations regarding them, were so carefully set forth in Chapter 10, that they will not be here repeated.

Let not the investor be surprised if so-called practical men object to these tests upon the ground that they are too theoretical or abstruse. The investor's alternative is to accept the bonds at the valuations of the seller. These are usually based upon appraisals, and nothing

could be more theoretical, abstruse and unpractical than ordinary appraisals. In 1911, for example, a year when New Haven stock sold as high as 151, the value of the property was appraised by an engineer of the highest reputation at \$263,600,000, as compared with a book valuation contained in the New Haven balance sheets of \$188,300,000. The appraisal placed the property value \$75,000,000 above its book value, thus indicating that the stock was in a very secure position, and straightway the stock began to slump, and kept on until it had fallen from 151 to 43. Its high record of 1902 was 255. Appraisals are usually made in the interest of the seller, or the capitalizer, and therefore it would be contrary to human nature if they were not placed too high.

Furthermore, the pithy answer to the charge that these tests are abstruse is that they are *necessary*. The best bond houses make but few mistakes; but the best of bond houses, like the best of everything else, are in the minority. For illustration, there are several publishing houses which sell manuals of bond offerings; and any one of these books discloses a large minority of bonds which quite fail to come to the hopes and expectations of the sellers. At this writing if we open one of these manuals at random, to the Ds and Es, for example, we find the following:

Bond	Flotation price	Present Selling price
Dayton Lighting Co. 1st 5s of 1937.....	95	91
Denver City Tramway 1st 5s of 1933.....	95	73
Denver Gas and Electric general 5s of 1949...	100	90

Bond	Floating price	Present Selling price
Detroit River Tunnel 4½s of 1961.....	102	90
Detroit United Railway cons. 4½s of 1932....	97½	72
Duluth Rainy Lake & Winnipeg 1st 5s of 1916.	101	95
Eastern Pennsylvania Power refunding 5s 1939	96	84
East St. Louis & Suburban coll. tr. 5s 1932....	97½	86
Empire District Electric 1st 5s of 1949.....	92½	73

This list does not contain bonds of any of the numerous properties which have fallen into receivers' hands. Furthermore, in a great majority of instances the flotation prices are not given in these manuals, so that the list does not even contain any substantial proportion of the bonds under D and E which are selling far below their flotation price. The need for personal examination on the part of the investor of the bonds he pur- poses to buy is unquestionable. The fact is that even among banks, trust companies, estates and other careful investors, it is only a very small minority of investment accounts which could be sold out for what they cost. Therefore, the practical method is to use these tests de- scribed above rather than trust wholly to the valuations of the makers' and sellers' bonds. It should be said, nevertheless, that there is probably no other class of business men who, if given the same opportunity to overcharge for their goods, would abuse that oppor- tunity as little as bond houses have done.

XIII

Steel and Iron Bonds

AMONG the best of industrial investments are the bonds of steel and iron companies. They are not much in the public eye, because there is no speculative furore over these companies. Besides that, there is no reason why any group of our financial houses should be especially anxious to call public attention to them, for the reason that there are no large new issues, and therefore no necessity of creating a market for them. The principal merits are that they yield as much as 5 to $5\frac{3}{4}$ per cent. against $4\frac{1}{2}$ to $5\frac{1}{4}$ per cent. for thoroughly secured railroad and municipal bonds, and that they are almost equally safe. Steel and iron companies reached mature growth before the recent era of bond inflation and radical methods of financing began. Thus it happened that the majority of these companies were financed largely by means of stock issues, instead of being loaded up with heavy bonded debts and burdensome fixed charges.

It is not only the moderation of steel and iron companies in the issue of bonds, but also the growing size and importance of the industry that have given to these bonds a degree of stability not possessed by the majority of industrial securities. There was a time when this industry thrrove principally because of the protective

tariff, and could scarcely have faced English competition without protection. Now, however, it is strongly fortified; and the earning power of practically all the important companies is quite sufficient to more than take care of interest charges without any protection at all.

Even since 1903 there has been a very great change in the position of bonds of this class. In November of that year the United States Steel 5s of 1963 sold down to 65—so little was their true value appreciated. There was a great deal of talk about the disruption of the Steel Corporation, and not a little speculation as to what would be left for the bondholders in such an event. People could not forget that the Carnegie Steel Company a year or two previous to the organization of the Steel Corporation had been offered for sale at a mere fraction of the price at which it was taken into the combine, and they were prone to assume that steel companies were worth but little more in 1903 than in 1898.

There was, however, a vast difference; for the consumption of steel and iron products was growing by leaps and bounds, and generally speaking, every ton of steel sold placed behind the bonds of these companies additional assets of from \$2.00 to \$5.00. In the panic of 1907 the value of United States Steel 5s was much better appreciated, and they sold below 82 only for a very short time, while their extreme lowest price was 78½. It may now be justly doubted whether they will ever again sell at 78½, as they did in 1907; and

that they will ever sell at 65, as in 1903, is extremely improbable. The enhancement of the value of these, and all steel company bonds, arises in one way or another from the facts that steel and iron are now used for so many more purposes than formerly, and that every one of our important industries consumes more steel, even in proportion to its increased volume of business, than it did a few years ago.

These bonds are not very numerous, and might well be included among industrial bonds in general except that they have special distinctions. These are that the issues of steel bonds are exceptionally small in comparison with the earnings of the companies; and that on this account the bonds themselves are superior in quality to other industrial issues. Some of the best known steel and iron company bonds are the following:

Company	Interest	Maturity
Bethlehem Steel Company.....	5	1926
Bethlehem Steel Company.....	6	1998
Bethlehem Steel Company.....	5	1942
Buffalo & Susquehanna Iron Company...	5	1932
Buffalo & Susquehanna Iron Company...	5	1926
Colorado Steel and Iron Company.....	5	1943
Colorado Steel and Iron Company.....	6	1919
Illinois Steel Company.....	4½	1940
Indiana Steel Company.....	5	1952
Jones and Laughlin Steel Company.....	5	1952
Lackawanna Steel Company.....	5	1923
Lackawanna Steel Company.....	5	1950
National Tube Company.....	5	1952
Pennsylvania Steel Company.....	5	1917
Pennsylvania Steel Company.....	6	1925
Pennsylvania Steel Company.....	6	1927
Republic Iron and Steel.....	5	1943
Republic Iron and Steel.....	5	1940
Rogers-Brown Iron Company.....	5	1940

Company	Interest	Maturity
Sloss Sheffield Iron Company.....	6	1920
Sloss Sheffield Iron Company.....	4½	1918
Tennessee Coal and Iron Company.....	5	1951
Tennessee Coal and Iron Company.....	6	1917
Tennessee Coal and Iron Company.....	6	1930
Union Steel Company.....	5	1952
United States Steel Corporation.....	5	1963

Analyses of these bonds are very simple indeed, because so few points have to be noticed. To be sufficiently high grade to correspond with the description here given, the net earnings of a steel and iron company should be equivalent to at least 140 per cent. of its total charges, including interest. Then, too, the bond issues themselves should be very small in comparison with total capitalization. If the bonded debt of a steel and iron company much exceeds one-third of the average market value of the total capitalization, then the junior bonds of that company are not very high grade. Of course the market value of the total capitalization is obtained by adding together all the stock, bonds and note issues at their average market prices. An important point, and perhaps the most important, regarding these bonds is that their merit rests upon the smallness of the bonded debt in comparison with the total earnings, and upon the great excess of net earnings over total charges. Where these features cease to exist, the special merits of the bonds also cease to exist.

XIV

Short Term Notes

SHORT term notes are a comparatively new set of securities, having practically originated in 1903, but they have a number of peculiar merits. Among these are their higher yields, their general exemption from possible consequences from tariff changes, their comparative independence of changes in earnings, and their larger degree of security than is afforded by other obligations showing the same yield.

Until recently investors gave but little attention to notes, because there was no opportunity to invest in them continuously. It was well enough to buy a few of them for the sake of variety; but the larger part of one's funds had to be kept in bonds and stocks. In 1904, for example, the total note sales of all leading corporations in the United States amounted to only about \$90,359,500, whereas the total bond sales were approximately \$914,748,500. Thus one had ten times the selection in bonds than he had in notes. In 1914, however, our aggregate bond sales were about \$1,436,517,900, while the notes sales alone were \$526,345,500. As showing the larger choice of notes now offered to the investor, the total sales for a series of years are given. The figures prior to 1907 are approximates.

Year	R. R. Notes	Other Notes	Total Notes	Bonds plus Notes
1903	\$160,000,000	\$ 27,760,000	\$187,760,000	\$ 822,538,200
1904	77,000,000	13,359,500	90,359,500	914,798,500
1905	78,000,000	13,533,000	91,533,000	1,185,789,200
1906	118,000,000	20,463,000	138,463,000	1,340,546,700
1907	269,160,000	60,702,700	329,862,700	1,299,419,700
1908	175,000,000	16,341,000	191,341,000	1,380,764,000
1909	195,980,000	31,478,000	227,458,000	1,430,330,000
1910	212,951,000	61,753,800	274,704,800	1,417,637,100
1911	326,948,000	67,590,000	394,538,000	1,644,670,300
1912	377,793,300	130,991,000	508,784,300	1,625,610,500
1913	427,229,700	164,892,000	592,121,700	1,482,556,300
1914	421,999,000	104,346,500	526,345,500	1,436,517,900

Thus the total of note issues has risen from a sum equal to about 10 per cent. of the amount of bonds plus notes yearly absorbed by the public, to a sum equal to almost 30 per cent.; for these bond sales refer not to the transactions on the New York Exchange, but to the estimated total absorption of new issues by the people of the United States. The investor, therefore, has a much wider choice of notes than formerly; and what is still more important is the fact that he has this choice constantly before him.

Moreover, this choice seems likely to remain before the investor for some years to come. The popularity of note financing is not likely to decline materially until the market for low-interest or long-term bonds improves enough to enable corporations to raise money as economically with bonds as they now do with notes, and to do so in face of the practical difficulty that in most cases the bonds issued instead of notes would have to be debentures. Bond financing of this kind is not likely to become such an easy matter, so long as there is such a

demand for high yields, and such an abundance of preferred stocks recommended to the public by financial houses which formerly confined themselves to high grade bonds.

Because of the greater abundance of notes and of the increased difficulty of distinguishing between good securities and poor, some investors have already adopted the policy of confining themselves almost exclusively to notes. Their reasons for so doing were explained by the secretary of a well known trust company, who said:

"The investor cannot analyze bonds and preferred stocks. The one and only thing he has to rely upon for the safety of his money is the reputation of the firm from which he buys. A few years ago this was quite enough, as there were a dozen bond houses in the street who carefully examined the properties behind every bond they sold, and made certain that the bond was perfectly good, not only in law, but in earning power and every other way. But now many investment concerns are sort of financial department stores, which carry most everything, good, bad and indifferent, and furnish you just as long a list of reasons for buying the bad and indifferent as for buying the good.

"I used to buy bonds; but when they got to issuing bonds with nothing but stock collateral behind them, and not enough of that, I got tired of it. If there were a sort of pure food law for bonds the same as there is for groceries, and if each bond were labelled with the amount of water it contains, and with the commercial

value of the physical property underlying it, then I would still feel like buying bonds. As it is, I don't know enough; and for a short cut to a fair yield with good security, I buy nothing but notes."

Certain it is that the buying of notes is relatively simple. The main precaution is to make sure that net earnings are large enough to more than cover fixed charges; and this can be readily done without any searching analysis. The most conspicuous recent instance in which the investor in notes faced an embarrassing situation was that of the Erie Railroad in 1908; and in both 1907 and 1906 the total net income of the road was quite too small, as compared with total charges to give any ground for believing that the notes were especially secure. In 1907, fixed charges were \$15,131,583, and net income only \$19,393,212, even though the fiscal year 1907 was one of the greatest boom years the railroads ever had.

The Erie notes, nevertheless, turned out all right, and that is usually the case with these short term issues. They are practically much more secure than their legal status would seem to indicate. Of course mortgage bonds are a prior lien to them; but the amount of notes which a company has outstanding at any one time is usually small as compared with its funded debt. If then, at the time these mature, there are outstanding no bonds upon which the interest is simultaneously due or overdue, the company would have the choice of being placed in receivers' hands by the note holders, or else

refunding the notes, and the latter course would almost invariably be pursued. It is generally agreed that these notes, in case of a receivership, could not be treated as current liabilities, and that their security therefore usually rests upon the credit of the issuing company.

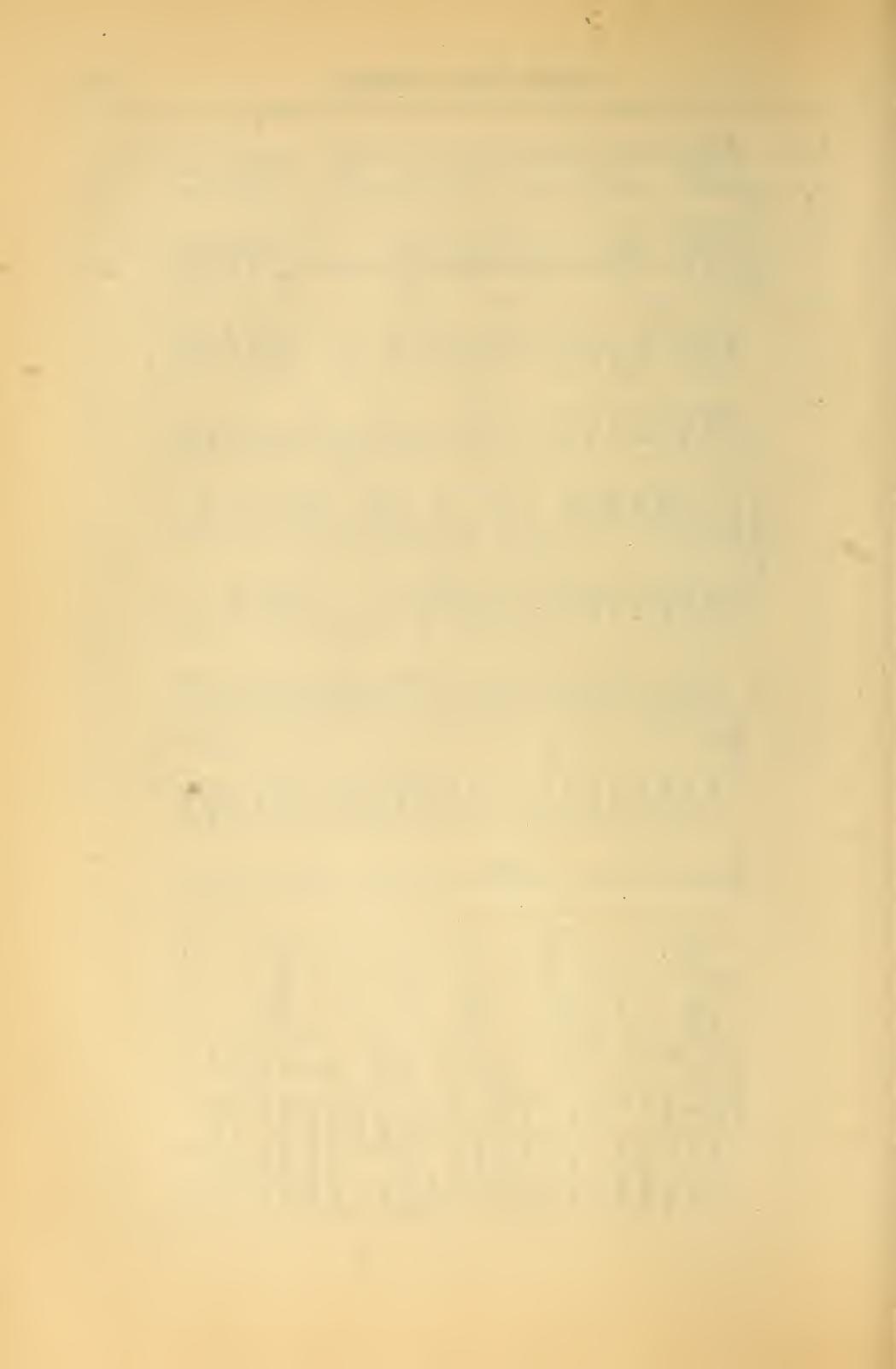
In some cases, however, their safety is much greater than the credit of the company would seem to indicate. This was notably true of the General Motors 6s of 1915. These were secured by a first lien upon all the securities of subsidiary companies held by the parent company, and upon the entire interest which the parent company had in the plants and physical properties of its subsidiaries. Thus all the best assets of the whole system were placed behind these notes. To make them still more attractive there was a sinking fund requirement of \$2,000,000 per annum; and there were conditions in the trust deed preventing the subsidiaries from issuing prior obligations while the notes were outstanding. Thus it sometimes happens that a company, whose credit is no higher than was that of the General Motors Company in 1912 and 1913 may issue an especially secured and perfectly good note. As a general rule, nevertheless, it is a wise policy to buy the notes of only those companies whose net income before taxes and interest is equal to 140 per cent. or more of all fixed charges.

In yield, the same as in security these notes rank between bonds and stocks. They return to the investor from a half of 1 per cent. to 1 per cent. more than high grade bonds, and from a half to 1 per cent. less than

standard stocks. From a speculative standpoint they offer practically no attractions, since there is seldom or never any possibility of much profit on the principal. But for investment one of their strong points is the early maturity, and the practical absence of any loss from depreciation even in a bear market. In 1907, for example, while twenty representative mortgage bonds were declining 13.3 per cent., sixteen representative notes sold off only 10.5 per cent.

Because of their early maturity they are also excellent collateral; and business men who want to get a return out of their idle bank balances can safely invest in them. If cash is needed before they mature, a collateral loan can easily be obtained at an interest rate fully covered by the return on the notes. By way of illustrating the excellent stability of these notes, the following exhibit on page 117 is given of their action during the 1914 war panic:

Company	Rate	Maturity	November 16, 1914			July 20, 1914		
			Bid	Asked	Yield	Bid	Asked	Yield
Amalgamated Copper Co.	5	Mar. 15, 1915	99 $\frac{1}{8}$	100	5.00%	100 $\frac{1}{8}$	100 $\frac{3}{8}$	4.45%
Am. Tel. & Tel. (Sub. Cos.) ..	5	Apr. , 1916	99 $\frac{1}{4}$	99 $\frac{1}{4}$	5.20	99 $\frac{1}{8}$	100 $\frac{1}{8}$	4.95
Am. Tobacco Co.	6	Sept. 1, 1915	100 $\frac{1}{8}$	100 $\frac{5}{8}$	5.10	......	......	......
Baltimore and Ohio.....	4 $\frac{1}{2}$	June 1, 1915	99 $\frac{3}{8}$	99 $\frac{5}{8}$	5.20	99 $\frac{1}{8}$	100 $\frac{1}{8}$	4.35
Brooklyn Rapid Transit.....	5	July 1, 1918	98	98 $\frac{5}{8}$	4.50	99	100 $\frac{1}{8}$	5.00
Chic. & West. Inda. R. R.	5	Sept. 1, 1915	98 $\frac{1}{2}$	99 $\frac{1}{2}$	5.60	99 $\frac{1}{2}$	99 $\frac{3}{4}$	5.20
Chesapeake and Ohio.....	5	June 1, 1919	87 $\frac{1}{2}$	89 $\frac{1}{2}$	7.80	93 $\frac{1}{8}$	93 $\frac{3}{4}$	6.50
Chic. Jct. Ry. & Un. Stockyds.	5	July 1, 1915	99 $\frac{3}{8}$	100	5.00	100	100 $\frac{3}{8}$	4.65
Erie Railroad	5 $\frac{3}{4}$	Apr. 1, 1917	93	96	7.05	98	98 $\frac{1}{2}$	6.10
General Rubber	4 $\frac{1}{2}$	July 1, 1915	98 $\frac{5}{8}$	99 $\frac{1}{2}$	5.50	98 $\frac{1}{4}$	98 $\frac{3}{4}$	5.75
International Harvester.....	5	Feb. 15, 1915	99 $\frac{1}{2}$	100	5.00	100	100 $\frac{3}{8}$	4.35
Maine Central R. R.	5	May 1, 1919	96 $\frac{1}{2}$	98 $\frac{3}{4}$	5.45	98 $\frac{3}{4}$	99 $\frac{3}{8}$	5.20
Mass. Electric Cos.	5	May 1, 1915	99 $\frac{3}{8}$	100	5.00	99 $\frac{5}{8}$	100 $\frac{1}{8}$	4.65
Minneapolis Gen. Electric....	6	June 1, 1917	97	98 $\frac{1}{2}$	6.60	99 $\frac{5}{8}$	100 $\frac{1}{8}$	5.95
New York Central.....	5	Sept. 15, 1915	98	99 $\frac{1}{2}$	6.20	......	......	......
New Haven	5	May 1, 1915	91	95	15.55	96	97	8.60
New York City	6	Sept. 1, 1916	102	102 $\frac{3}{8}$	4.60	......	......	......
Pennsylvania R. R.	3 $\frac{1}{2}$	Oct. 1, 1915	98 $\frac{1}{2}$	98 $\frac{7}{8}$	4.90	......	......	......
Schwarzchild & Sulzberger ..	6	June 1, 1916	98 $\frac{1}{4}$	99 $\frac{1}{4}$	6.50	99 $\frac{5}{8}$	100 $\frac{1}{4}$	5.85
Southern Railway Co.	5	Feb. 1, 1916	97 $\frac{1}{2}$	99 $\frac{1}{4}$	5.65	99 $\frac{1}{4}$	99 $\frac{3}{4}$	5.15
Sulzberger & Sons	6	June 1, 1916	98 $\frac{1}{4}$	99 $\frac{1}{4}$	6.50	99 $\frac{5}{8}$	100 $\frac{1}{4}$	5.80
United Fruit Co.	6	May 1, 1917	99 $\frac{1}{2}$	100 $\frac{1}{8}$	5.95	100 $\frac{5}{8}$	101 $\frac{1}{8}$	5.45
Utah Co.	6	Apr. 1, 1917	96	98	6.25	99 $\frac{5}{8}$	100 $\frac{3}{8}$	5.85



XV

Bank Stocks

INVESTMENTS in bank stocks can be made to yield somewhat more than equally safe investments in other securities; but it requires care. Statistical tests of the earning power of these stocks are not so readily available as in the case of railroad bonds. There are no monthly reports of gross and net earnings to be guided by, and in many instances the deposits are only shown periodically at such times as they are required by State and National officials. Moreover, earnings do not vary in proportion to the volume of business, as do railroad earnings. Hence, even if the deposits were known to the investor at all times, that would not give him a sure indication as to the movement of earnings. The latter are affected almost as much by the changes in the rates of interest received on loans as in the amount of deposits.

These difficulties, however, are not insurmountable; for by watching the movement of deposits, and also the movement of interest rates in the locality where the bank is situated, the investor can get a sufficiently accurate idea of changes in earnings. He must of course also consider the personnel of the bank's management, and the composition of the deposits. Deposits received

from other banks are less profitable than those received from individuals.

Then, too, there are other ways in which the efficiency of a bank's management may be tested by the investor. The net earnings of a bank usually average about 2 per cent. or less upon its loanable deposits—by which is meant deposits minus cash reserve. Hence the intending buyer may obtain a pretty good test by finding the proportion of net earnings to loanable deposits over a series of years or shorter periods; and if this proportion of net earnings is being maintained while interest rates remain practically constant, or if it is rising while interest rates are rising, or if it is not falling more than it should while interest rates are falling—he may be fairly confident that the management is efficient.

Another test of the safety of a bank stock is the percentage of loans to individual deposits. Ordinarily it is evidence of unconservative methods for loans to exceed individual deposits by more than 3 to 5 per cent. But of course the kind of business the bank is doing, and the extent to which it acts as reserve agent must be taken into consideration. The larger a bank's holdings of bankers' deposits, the larger should be its percentage of call loans to total loans, so that in case it is called upon by other banks for funds, it will readily be able to raise them.

The percentage of cash to loans is also significant; and here, too, the investor must distinguish between individual deposits and bankers' deposits, for the bank

holding a large percentage of the latter should maintain a higher percentage of cash to loans. It is interesting to note that most of the banks which failed or suspended in 1907 were large holders of banks' deposits. Indeed, that was distinctively a bankers' panic; for the runs on New York were caused, not by individual depositors, but rather by the heavy withdrawals on the part of the interior banks. Had the banks conducted themselves with as much courage and faith in each other as did their individual depositors, there probably would not have been any panic.

With due attention to these points, the investor can get along very well with little or no knowledge of the personnel of a bank. There still remains to be considered the danger of losses through fraudulent management. Of all the national bank failures from 1865 to 1911 inclusive, 22.63 per cent. were brought about by frauds. The investor, however, can guard against this fairly well by making a practice, when purchasing stocks of banks whose personnel he does not know, of buying only the stocks of the larger banks. In them there is less danger from fraud because any possible amount of embezzlement is bound to be small in proportion to the total assets of the bank.

In doing this, there is another principle which is well worth remembering; and this is, that as productive and commercial business expands, the interior and country banks draw more heavily upon the banks of the big cities such as New York, Chicago, Boston and Phila-

adelphia, in order to finance their own local needs. Hence the deposits of the banks in these large cities are apt to remain stationary or even decline when productive and commercial business is expanding rapidly, whereas those of the interior and smaller cities gain rapidly, in deposits and earning power. Thus it comes about that at such times it is often profitable to sell the stocks of the big city banks, and invest the proceeds in the stocks of the interior banks. As an example of this tendency, the heavy losses in deposits of the Chicago banks during a recent year are noteworthy.

Bank	Dec. 5, 1911	Nov. 26, 1912
Cont. and Com. National Bank....	\$180,043,830	\$169,505,435
Corn Exchange National.....	66,534,736	56,462,116
First National	123,453,983	110,282,806
National City	30,713,014	26,375,386
Merchants Loan and Trust.....	66,246,839	55,536,597
Total Big Banking Institutions.....	878,434,945	837,009,236

This total for the big banking institutions included all the banks and trust companies having more than ten millions of deposits. During the given year these lost \$41,425,709. Meanwhile the New York banks and trust companies combined showed similar losses totaling over a hundred million dollars. The country banks of the South were drawing upon New Orleans with similar results; and many of the Philadelphia and Boston banks were also losing from the same cause.

It is not meant that these big city banks on such occasions are apt to suffer any serious loss of earning power, but only that their earning power is not likely to increase

so rapidly as that of many of the interior banks, and that it is therefore good investing to sell the stocks of the former, and buy the stocks of the latter. The big city banks profit the most from activity in the financial world, and large transactions in stocks and bonds, and in the flotation of new companies; but the interior banks profit the most from the production of large crops, and large amounts of mineral and manufactured goods. This may readily be seen from the following comparisons:

Year Ended	National Bank Earnings		Bank Clearings		R. R. Tonnage	Farm Production
	N. Y.	All	N. Y.	Other		
July 1, 1907	12.9%	10.16%	\$99.48	\$58.09	1,741	.....
Jan. 1, 1908	8.8	10.03	87.18	57.84	.....	\$5,289
July 1, 1908	10.6	9.11	84.24	53.50	1,505	.....
Jan. 1, 1909	12.1	8.88	79.27	53.12	.....	5,716
July 1, 1909	9.9	8.72	93.39	57.39	1,560	.....
Jan. 1, 1910	10.4	9.09	103.59	62.25	.....	5,781
July 1, 1910	10.9	9.67	107.45	66.01	1,845	.....
Jan. 1, 1911	10.6	10.03	97.27	66.82	.....	6,015
July 1, 1911	8.6	9.36	90.91	66.75	1,835	.....
Jan. 1, 1912	.....	.....	92.37	67.85	.....	5,760
July 1, 1912	8.9	8.59	96.05	70.59	1,834	.....
Jan. 1, 1913	.....	.....	100.74	74.17	.....	6,335

Above are given the earnings of the New York National banks in comparison with those of all national banks in the United States, and the New York clearings contrasted with the clearings outside of New York. There are also given in millions of tons the freight traffic of all roads in the United States for the years ended June 30, and in millions of dollars the quantitative value of the total output of farm products in the United States for the calendar year.

The significant showing is the manner in which the earnings of banks outside of New York, respond to the increase in mercantile and productive business. The volume of such business is shown by the changes in railroad tonnage and in farm production. The 1910 crops, for example, were very large, being worth \$6,015,-000,000, even when valued at the twenty year average prices for each crop, as compared with only \$5,781,-000,000 for the crops of the previous year. Correspondingly the earnings of all banks for the year ended January 1, 1911 were equal to 10.03 per cent. against 9.67 per cent. for the year ended July 1, 1910, although in the meantime the earnings of the New York banks declined.

The reason for the decline in the latter is to be found in the decrease of financial transactions, and these are reflected in the smaller bank clearings in New York. (Bank clearings above are given for six month periods, and stated in billions of dollars.) For the six months ended with January 1, 1911, the New York clearings were only \$97,270,000,000 against \$107,460,000,000 for the previous six months. It may be observed right through this period that the earnings of the New York banks respond pretty generally to the increase or decrease in financial transactions as portrayed by bank clearings and stock exchange trading, and that the earnings of all banks taken together respond to changes in production or trade.

Thus we arrive at the important generalization that

when trade and production are fairly active, and financial business is dull, it is a good thing to sell the stocks of the big city banks and invest in those of the interior banks. But on the other hand when financial business, such as the issue and sale of new bonds, and the trading in stock exchange securities becomes very active, the earnings and deposits of the big city banks grow more rapidly than those of the interior banks. Hence at such times it is a good general policy to exchange in the opposite direction. Financial business when it becomes very active increases the deposits of the metropolitan banks very rapidly—a great deal more rapidly than the deposits of the interior banks ever grow.

Nevertheless, it should be borne in mind that all these statistical indications are more or less of a failure for the ordinary investor. The fact remains that bank stocks are a rich man's investment, and that it is only through knowing a great deal about the personnel of a bank, and what is going on in its private offices, that one can really judge the future of its stocks.

With this knowledge it is often possible to foresee a great rise in the stock of a bank or trust company, and to profit accordingly. Without it such foresight is theoretically possible to the expert statistician, but is seldom attained in practice. In general, it is not too much to say that it is unwise to invest in bank stocks unless one has an intimate personal acquaintance with the man or men in direct control of the given bank.

For the ordinary investor there is the same objection to bank stocks that there is to the stocks of security

holding companies. This is that the assets of both are so liquid that they can disappear over night without any forewarning. In the case of a bank this means that it is an easy matter for a loan account, which is the most important item among the assets of any bank, to become so filled up with bad loans as to render the bank insolvent. This, moreover, can and sometimes does happen while the stock of the bank is still quoted at high figures and while a large majority of the stockholders have not the slightest intimation that the stock is not a perfectly good investment.

This subject should not be dropped without some reference to the probable effect of the Federal Reserve Act upon national bank earnings. It does not seem probable that the new act will have any perceptible effect on bank earnings; and even if it should that effect should be slight. Taking the worst view of it, National banks earn an average of about 9 per cent. on their capital and surplus, whereas the 6 per cent. of their capital and surplus to be invested in the stocks of the Federal Reserve banks will pay only 6 per cent. Here is a loss of one-third on a sum equal to 6 per cent. of the capital surplus. This loss figures out about \$3,200,000 for all National banks in the United States, whereas their total net earnings for the year ended June 30, 1913, amounted to \$160,980,084. There will in fact probably be no loss of earning power whatever, since the greater flexibility of reserves and the smaller disturbance from crop movements, etc., should enable banks to loan a larger proportion of their individual deposits.

XVI

Railroad Junior Bonds

THE junior bonds of railroad companies, including not only debentures and convertibles, but also collateral trust bonds and even second and third mortgages, require an entirely different handling from the genuine first mortgage bonds. The latter sell in most any market purely according to the degree of attractiveness which their current income gives them. That is to say, a real first mortgage is affected not by fluctuations in earnings, but rather by the rise and fall in the true value of money and capital, as expressed chiefly in interest rates. When money is dear, such bonds decline a little, and when it becomes cheap they recover again.

On the other hand, junior bonds fluctuate more like stocks. If they are pure debentures the value of money, or their income basis, does not influence their prices at all. They go up and down according to the earnings, prosperity and prospects of the debtor corporation. In this respect they are different from stocks only in degree; for their fluctuations respond to exactly the same factors, and the main difference is that their interest cannot be reduced or passed, whereas dividend payments can be. Even with such pure debentures it is a part of the professional etiquette of the bond salesman to talk as if the income basis were a very important

consideration, and to calculate the income down to small fractions of 1 per cent. upon the theory that the bond is to be held until maturity. However, every profession has its fashions and fictions, and this is just a little bit of pardonable nonsense.

As a matter of fact the value of the pure debenture is not a question of income basis at all, but rather a question of the future prosperity of the borrowing corporation. With prosperity ahead, such a bond may rise so much above its flotation price as to net the investor within a few years a good deal more than its income basis would indicate; and with adversity ahead, it may decline so much, and become so unsafe, that the investor may feel obliged to sell at a loss which would wipe out all his interest and part of his principal.

In view of this uncertainty as to whether and how long a debenture can safely be held, its income should be figured not upon the basis of holding to maturity, but rather upon the current price of the bond. For instance, in the case of such a debenture paying 4 per cent. on par, maturing in twenty years, and selling at 83, the yield should be regarded not as 5.40 per cent. but rather as 4.82 per cent. In taking the yield of such a bond from the bond tables, the investor is simply deceiving himself, because at any moment new or unforeseen circumstances may oblige him to sell instead of holding to maturity.

What is true of a pure debenture, is half true of a bond which is secured by assets only to the extent of

about 50 per cent., and is a third true of a second or third mortgage bond which is secured by assets to the extent of about one-third. Probably the best readily available method by which the investor can at once appraise the safety and stability of junior bonds is to judge from the income basis at which they are floated. Broadly speaking, and subject to qualifications, the best bonds are floated at the lowest yields, and vice versa. A good way to find the answer to the question whether one desires to purchase such a bond is to bear in mind the probable number of points it will decline during the next big bear movement in securities. These declines for bear movements such as those of 1893, 1903, 1907 and 1914, may be estimated as follows:

Flotation Income Basis	Probable Decline in Bear Movements
4 $\frac{1}{4}$ or less	10 points or less
4 $\frac{1}{4}$ to 4 $\frac{1}{2}$	11 points approximate
4 $\frac{1}{2}$ to 5	12 points approximate
5 $\frac{1}{2}$ to 5 $\frac{1}{2}$	14 points approximate
5 $\frac{1}{2}$ to 5 $\frac{3}{4}$	16 points approximate
5 $\frac{3}{4}$ to 6 $\frac{1}{4}$	18 points approximate
6 $\frac{1}{4}$ to 6 $\frac{1}{2}$	20 points approximate
Above 6 $\frac{1}{2}$	Over 22 points

By the nature of things there is nothing of precision about these estimates, but they are broadly and essentially true. Much depends upon the ability of the given company to maintain its earning power upon the floating supply of the given bond, and upon the policies of the bond house which brought it out. Some houses habitually sell bonds at higher prices than others, and some habitually offer the investor better yields than others.

on exactly the same type of bonds. Nevertheless to follow the inferences which might be drawn from this tabulation would save the typical investor from many a surprise and disappointment.

Correct analysis of the assets under a railroad junior bond is so intricate as to be practically impossible. In making such an analysis very difficult and complicated calculations are necessary to find out the amount of the prior liens upon the property covered by the junior issue. To find this out it is necessary to know almost every detail in the indenture of each of the underlying bonds; and besides this there is often collateral security regarding which information is difficult or impossible to obtain. Hence about the only basis for judging these junior issues is to be found in the earning power back of them.

Doubtless the best expression of this earning power is the "margin of safety". By this is meant the percentage of total net income remaining after the payment of taxes, interest, rentals, and all other fixed charges. The figure representing this margin of safety is to be obtained by suffixing two decimal places to the surplus for dividends, and then dividing by total charges. Good railroad bonds invariably show a margin of more than 50 per cent., and when this margin gets down below 25 per cent. it is time for the careful investor to sell out for what the bond will bring. To hold it longer is to run the risk of witnessing a receivership and seeing the value of the bond scaled down.

Junior bonds which are floated at a yield of $5\frac{3}{4}$ per cent. or over, should generally be watched very closely. The annual reports do not come out often enough to give timely warning of a slump in the intrinsic value of such bonds. It is therefore desirable to calculate the margin of safety almost every month from the earnings reported to the Interstate Commerce Commission. These may be found in any good daily or weekly financial journal, and the method of calculation is as follows:

Suppose that the "net from railroad," or net operating earnings before the deduction of taxes, are \$11,000,000 for the elapsed portion of the present fiscal year, as compared with \$10,000,000 for the same portion of the previous year. This is an increase of 10 per cent., and we find by inspection of last year's annual report that the total net operating earnings for the entire year were \$24,000,000. Taking 110 per cent. of \$24,000,000, the indicated net operating income for the present year is found to be \$26,400,000. This percentage basis must be used instead of estimating upon the basis of earnings per month, because the Interstate Commerce Commission reports do not always include all the subsidiaries included in the reports of the Corporation.

To obtain the total net income add in last year's "other income," or investment income; and if, for example, this were \$2,500,000 the total net income in this case would be \$28,900,000. Next the total charges must be deducted. To estimate these add the average yearly increase in charges to last year's charges. If during

the past five years the average yearly increase was \$600,000, and if last year's charges were \$9,800,000, then the total charges should be estimated at \$10,400,000. Deducting these from the above total net income there remains an indicated surplus for dividends of \$18,500,000. Suffixing two ciphers and dividing by the total net income (\$28,900,000) it is found that the indicated margin of safety is 64 per cent., or that 64 per cent. of the total net income will remain after the payment of all charges. Owing to the lack of advance information as to changes in "other income" and charges, this method is not absolutely accurate, but it is a good practical method.

Convertible bonds constitute a rather distinct class among junior issues, and have some attractive features. In theory, by purchasing a convertible bond the buyer obtains a speculative profit without assuming a speculative risk. If the company becomes unprosperous it is none the less bound to redeem its bonds at par but if it is highly prosperous the stock goes up so much that a large profit can be made by converting the bond into stock, and selling the stock at the high prices. Indeed, although the conversion privilege is what causes the bond to follow the rise in the stock, it is unnecessary in practice to convert at all; for the bond can be directly sold at the high price.

Some years ago there was quite a rage for convertible bonds. Between 1900 and 1906 corporations were so very prosperous that stock values tended steadily higher

and higher and almost every convertible bond looked so promising as to sell substantially above the price it would have brought without the conversion privilege. But since 1907 surplus earnings, both railroad and industrial, have tended pretty steadily to diminish, with the result that conversion privileges are now not generally worth much.

In addition to the smaller earning power of stocks the financial policies of the railroads themselves have greatly diminished the value of the convertible privilege in many instances. For instance, the New Haven road after issuing convertible 3½s in 1906, and selling them at a high price, first greatly diminished their value by later issuing convertible 6s, and next completely wiped out the value of the convertible privilege by issuing such a flood of bonds and notes that the stock can never have any reasonable chance of selling enough above par to make the 3½s rise much. The Union Pacific in a similar manner practically destroyed the value of the convertible privilege of the 4s of 1927, through distributing some of its treasury assets, and reducing the common dividend from 10 to 8 per cent.

The convertible privilege of the Baltimore and Ohio 4½s of 1933 is greatly injured by the losses involved in the Cincinnati, Hamilton and Dayton purchase, and the value of this privilege for the St. Paul 4½s of 1932 may prove to be worthless partly because of the very heavy investment in the Puget Sound extension. The Chesapeake and Ohio convertible 4½s due 1930 had

the value of their privilege practically destroyed by the purchase of the so-called Chicago line, and the consequent heavy increases in operating expenses and charges.

With railroad bonds bought at their flotation price or anywhere around par, the conversion privilege is now seldom worth anything. If, however, they can be bought in a bear market during a bad break, it may be worth quite a good deal for a short period of time. The best policy then is to sell the bonds in the succeeding bull movement, and reinvest the proceeds in something more stable than junior bonds. In this way very substantial profits can be made without any considerable risk, and can be made about twice every five years.

XVII

Equipment Company Bonds

LOGICALLY these are merely one type of manufacturing bonds; and as such they would have no distinct place of their own. But in fact they have a distinct place which has been made for them by accident. The accident is that for no definite reason it has become a habit for equipment manufacturing companies to finance themselves principally with stock issues, and make only very small use of bonds and notes. Because of this habit these issues are better secured as to both assets and earning power than are a great many manufacturing company bonds, and are therefore in a separate class.

The general practice as to the use of stock and bond financing was disclosed by Poor's compilation of the capitalization of manufacturing companies in 1910; and the comparison with equipment companies is as follows:

	Manufacturing Cos. 1910	Equipment Cos. 1914
Bonded debt.....	\$ 2,585,694,207	\$ 65,131,750
Capital stock.....	8,233,035,721	318,900,988
Total capitalization.....	10,818,729,928	384,032,738

It is noticeable that while the bonded debt of manufacturing companies generally is 23.90 per cent. of their total capitalization, that of equipment companies is only 16.96 per cent. Moreover, the real difference is greater

than this, because the figures for equipment companies include \$8,194,000 of notes. Omitting these, their bonded debt is only 14.83 per cent. of total capitalization.

The superiority of equipment company bonds over other manufacturing bonds consists largely or wholly in the smaller amount of their funded debt. Their earnings are subject to as violent fluctuations as any other manufacturing companies. This is especially true of the makers of railroad equipment, and is true in a lesser degree of the makers of electrical equipment. Even the General Electric showed a decline in gross sales from \$70,977,168 in 1908, when the high record was established, to \$44,540,675 the following year. The sales of the Western Electric shrank from approximately \$69,000,000 in 1906 to about \$32,000,000 in 1908.

Both steam railroads and trolley companies in making purchases of new equipment are largely dependent upon the condition of the market for equipment trust bonds and other securities; for payment is usually made with the proceeds of security sales rather than out of earnings. Hence, in times of financial stress, or even in times like 1913 to 1915, when the demand for new securities is so very poor, orders for new equipment tend to decrease violently; and if these periods are prolonged, it causes a corresponding decline in the orders booked and in the gross sales of these companies.

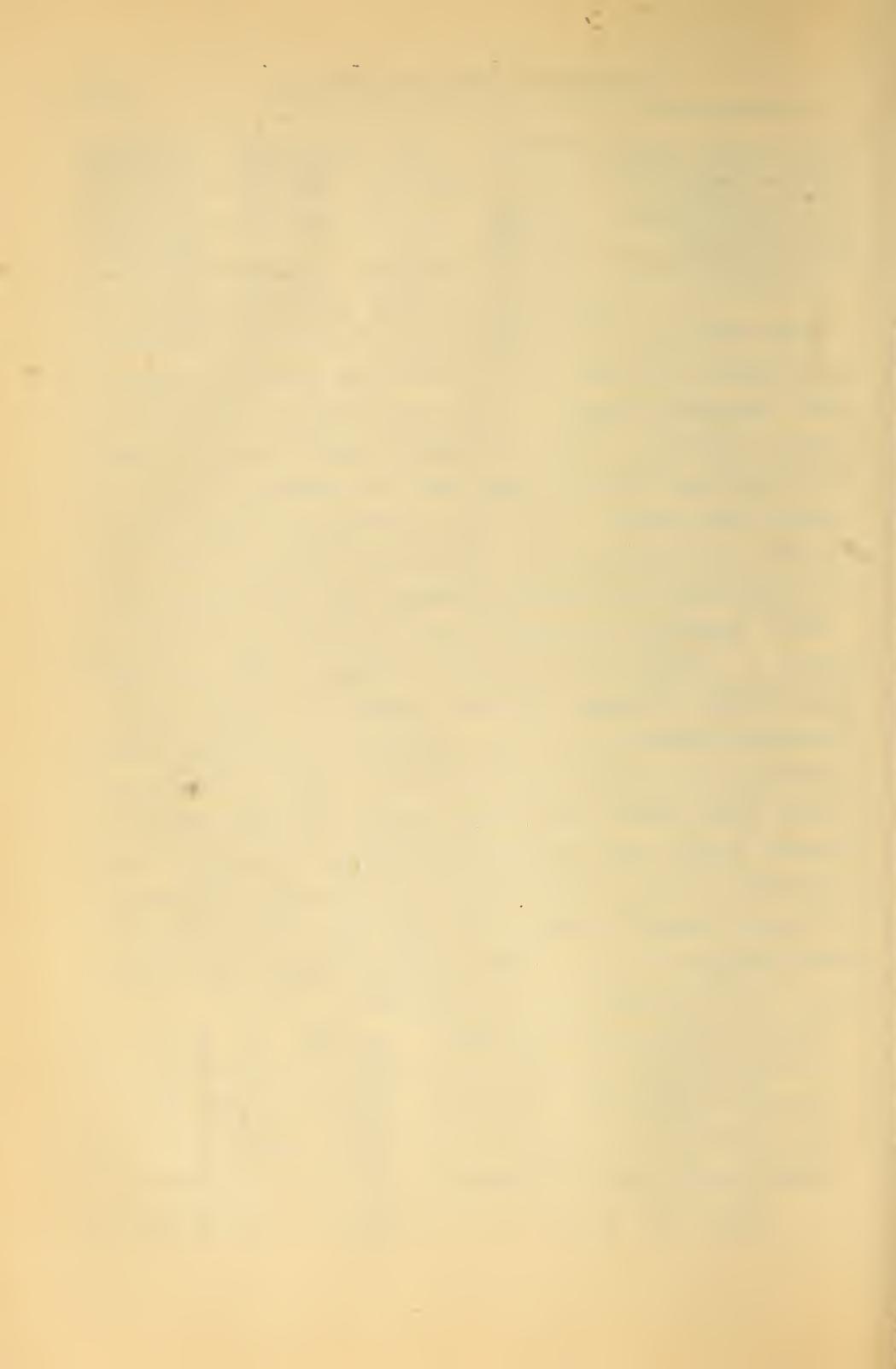
Since the quality of equipment company bonds depends so entirely upon the smallness of the issues, the composition of the capitalization of the leading companies is worth observing.

	Bonds.	Notes.	Pfd. Stock	Com. Stock
Amer. Car and Foundry	.....	.....	\$30,000,000	\$30,000,000
American Locomotive .	\$2,255,000	\$5,474,000	25,000,000	30,000,000
Pressed Steel Car.....	.....	.....	12,500,000	12,500,000
Railway Steel Spring..	6,783,000	.....	13,500,000	13,500,000
General Electric	12,293,000	.....	.....	101,202,000
Western Electric	15,000,000	.....	.....	15,000,000
Westinghouse Electric..	20,606,750	2,720,000	3,998,700	36,700,288
	\$56,937,750	\$8,194,000	\$84,998,700	\$233,902,288

From the fact that moderation in the use of bond financing is the chief basis of the high quality of equipment company bonds, it naturally follows that when such a company resorts to heavy bond issues, as the Westinghouse Electric has done, it naturally tends to reduce the quality. This company has been saved, temporarily or permanently, from this tendency only by the large business obtained through the war in Europe.

The American Locomotive Company has likewise issued a considerable amount of notes, and the total debt of the Western Electric equals its capital stock. However, the notes of the American Locomotive tend somewhat to reduce the investment value of its preferred stock rather than of its bonds; and the Western Electric bonds have a higher standing because of the ownership of the company by the American Telephone Company, and of the large earnings upon Western Electric Company's stock. The principal bonds and notes of all these companies are as follows:

American Locomotive 5% notes..	1915-1917	J. & J.
Railway Steel Spring 5s.....	1921	J. & J.
1st mortgage 5s.....	1931	A. & O.
General Electric 3½s.....	1942	F. & A.
Debentures 5s.....	1952	M. & S.
Western Electric 1st 5s.....	1922	J. & J.
Westinghouse Electric 5% notes..	1917	A. & O.
Convertible 5s.....	1931	J. & J.
Walker Co. 1st 6s.....	1916	J. & J.



XVIII

Manufacturing Company Bonds

HERE are quite a number of bonds of well established manufacturing companies which yield from 5 to 6 per cent.; and which, though not as good as high grade railroads or municipals, are nevertheless excellent and practically safe investments.

In selecting issues of this class, one should keep distinctly in mind the peculiarities of manufacturing company business and bonds. Two of the most important of these are the violent fluctuations in earnings, and the relatively small liquidation value of the plants and equipment. These two characteristics have a most important meaning for the investor. In a business depression gross earnings of these companies shrink anywhere from 15 to 60 per cent., while those of railroads are falling off only 5 to 20 per cent.; and this alone renders it important that the margin of safety with a typical manufacturing bond should be from $1\frac{1}{2}$ to 3 times as wide as with a railroad bond of similar quality.

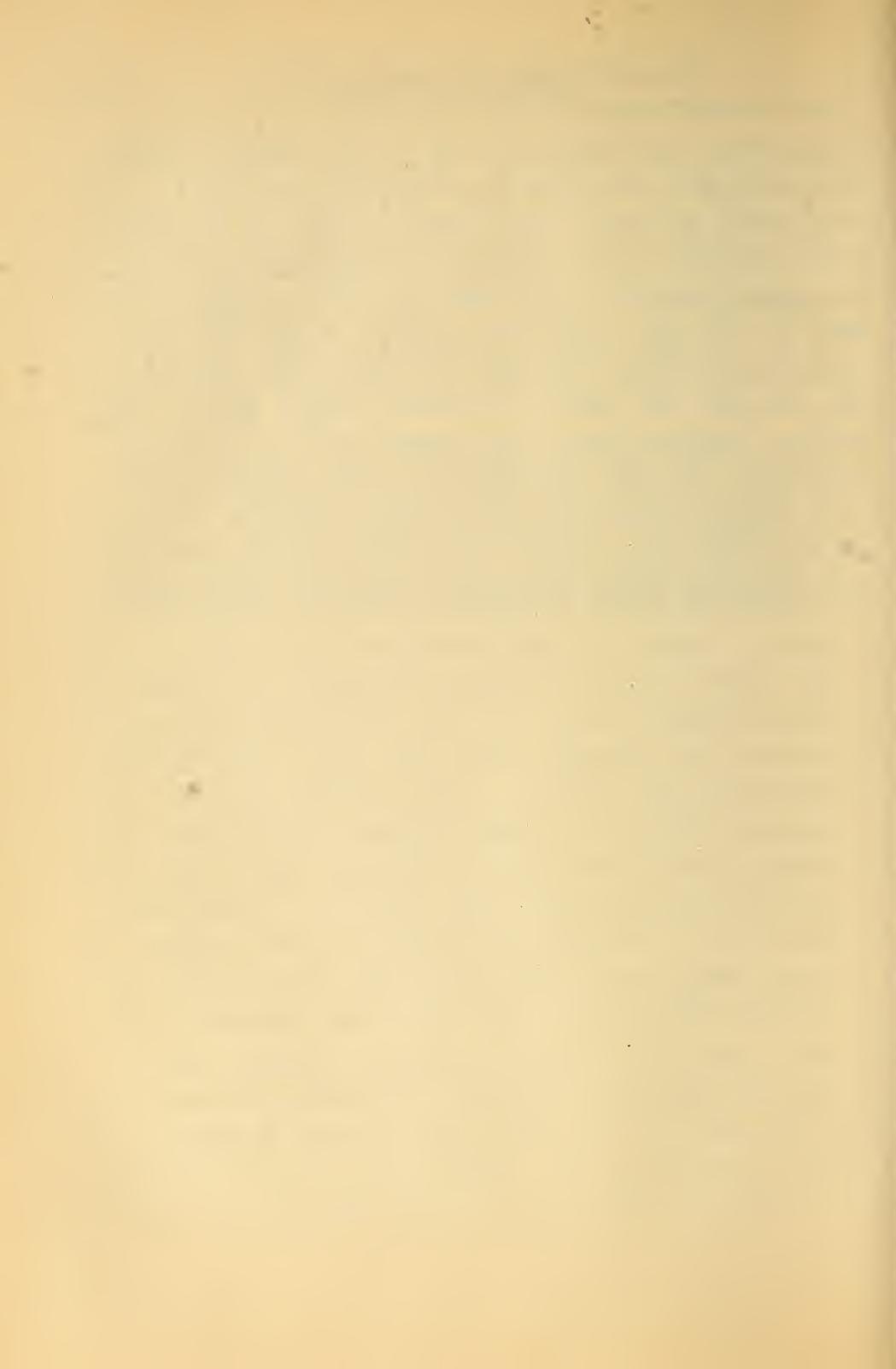
Then, too, a bond to be secure under any really correct definition must have assets enough behind it to make it worth par under a forced sale. The assets of a majority of manufacturing concerns are worth but very little except when the concern is continuing in business. The equipment and machinery, generally speaking, is

especially adapted to produce a certain type of goods for a certain market; and when the market disappears, or when from any other reason the machinery ceases to produce this particular kind of goods, it almost ceases to be anything but "scrap iron". Even if it be machinery of standard types serviceable in many capacities, it is second hand and can be sold for only 15 to 60 per cent. of its original cost.

In consequence of these peculiarities the funded debt of a manufacturing company should be very small in comparison with its total capitalization. Moreover, the capitalization should be figured in this connection at its average market value rather than its par value; and by this is meant that the bonded debt, in order to place the bonds in a strong investment position, should seldom or never exceed 35 per cent. of the average market value of both stocks and bonds—figuring all issues at their average market prices. Where manufacturing bonds are weak or undesirable, it is usually because their total is too large by this test; and if care is taken in this respect the investor may safely seek in this class of issues an income return from a half to 1 per cent. larger than can be obtained in the higher grade bonds such as railroads, municipals and the best public utilities.

In the ordinary analysis of these bonds, very little attention can profitably be given to the physical security. Knowledge of its true value would be very desirable if available; but it is not available. The physical security behind an industrial bond is practically incapable of

being valued by the investor. If it were railroad mileage one could get some idea by comparative studies of the true worth per mile; but to value a plant of an industrial company would require the employment of both an expert appraiser and also an expert judge of the market for the particular product which this plant turned out. Hence the tests to be practically applied by the investor are those of earning power, and of the ratio of funded debt to the market value of total capitalization. To give any attention to the value of plants and physical properties would simply place the investor in a position to be badly deceived by the large number of companies which immensely over-value their plants.



XIX

Copper Mining Bonds

THE bonds of copper mining companies are few in number and widely different in character; but in some of them there is not only the chance to get a very good investment return, but also to obtain at the same time options on copper mining stocks which occasionally become very valuable. The worth of these options or convertible privileges—for it is the convertible bonds that are especially attractive—depends of course upon the position of the copper share market at the time the investment is made. Such bonds rise and fall in sympathy with the shares, except that they do not fall below the prices warranted by their character as pure investments, no matter how low the share market may go. Hence in general after having selected the convertible bond of a good company the best time to buy is when prices are greatly depressed and sentiment very pessimistic.

Those who desire to seek large profits without taking any speculative risks may do so, often successfully, through the purchase of these convertible copper mining bonds. In avoiding the slightest speculative chance it is necessary to select only the most secure of such bonds, and then after the rise has occurred, sell them before the period of convertibility ends. Or, if they are held

and converted, the stock when received should be sold at once; for all copper stocks, however seasoned and high grade, should be regarded as speculations rather than investments for the reasons set forth in Chapter 29.

Most important of all the attractions of these bonds is the speculative profits which they offer during booms in the copper share market. As mere bonds to hold for investments they are no better and yield no more than a great many other industrial and public utility issues of equal or greater merit. These booms as a matter of history occur about once in seven to nine years; but even if the investor makes a mistake of expecting one too early, he still may enjoy a fair return on his investment during the period of waiting.

Copper mining bonds are given a place in this book solely because of the very large profits which can occasionally be made in them without any material risk. In number they are so few that the principal issues may be enumerated.

American Smelters Securities convertible 6s due 1926;
Braden Copper Mines convertible 6s due 1919;
Chino Copper convertible 6s due 1921;
Chile Copper convertible 7s due 1923;
Granby Consolidated convertible 6s due 1928;
Inspiration Copper convertible 6s due 1922;
Ray Consolidated convertible 6s due 1921;
Tennessee Copper first mortgage 6s due 1917.

This list, of course, is not at all exhaustive, but is sufficient for illustration. Bond financing is a comparatively new practice on the part of copper companies, and it is only within a very few years that the public

could be induced to believe that these bonds were really desirable. At first this method of financing was so cautiously used that the issuing company instead of putting out a pure copper mining bond used a sort of a hybrid railroad and copper bond. Reference is made to the Nevada Consolidated 6s, which were issued about eight years ago, partly for the building of the Nevada Northern Railroad. The bonds were convertible into stock at \$5.00 per share; and soon after their issue the rise in the stock to \$20.00 sent the bonds up to 400 per cent. In 1907 the Utah Copper Company issued \$1,500,000 6 per cent. bonds convertible into stock at \$20.00 and these rose in 1908 to 225.

Arizona Commercial 6s advanced rapidly in like manner. The Boston Consolidated Copper Company in 1906 issued \$1,250,000 convertible 6s, and these sold up to 200 before they were converted. Likewise the Utah Apex bonds commanded a premium of 100 per cent. within a few months after they were issued. Ohio Copper Company bonds also proved a success; and indeed there has been only one recent instance in which any legitimate copper convertible mining bond proved any sort of a failure.

Copper mining bonds without the convertible privilege are apt to be rather inferior investments unless the issues are very small in total amount. Nothing is more uncertain than the underground conditions of a copper mine. A cave-in or a flood may at any moment result in a shut-down and necessitate a huge expenditure of new

capital. Besides this, the life of the mine, whether it be a vein mine or a porphyry, is also a matter of conjecture, and there is great variation from year to year in the amount of necessary construction expenses. Because of these uncertainties a copper property cannot conservatively be mortgaged for more than a third to a half of its total value; and the best practical rule for the investor is to regard its total value as being expressed by the average market prices of all its outstanding securities. Book values with a copper mine are especially useless.

In analyzing these bonds the two important points are the safety or security of the issue, and the probability of a rise in price. In getting at both of these points, the stock into which the bond is convertible must be studied. Methods of analyzing copper values are discussed in Chapter 29. A copper mining bond, to be secure, must have behind it substantial ore reserves and large equities. That is, the market value of the capital stock should be equivalent to 100 to 300 per cent. of the par value of the total bonded debt.

XX

Coal Company Bonds

COAL company bonds, when issued by well developed companies of established earning power, are perfectly good and fairly high grade securities; but in recent years the public has frequently been asked to subscribe to a great variety of obligations or equities under this name which are not really bonds at all. The promise of a corporation to pay, in order to become a genuine bond, must be secured by a mortgage or otherwise; and many of the coal bonds of recent origin are not actually secured in any way.

Some of these have been issued against undeveloped or partly developed coal lands, which may or may not ever become profitable mining properties. There have been more fortunes made in the United States through buying new coal lands and selling them at a great advance in price than there have through the actual mining of coal—excepting only the case of the anthracite properties which represent in tonnage less than one-fifth of our total producing capacity. A bond issued against coal lands which have not reached the productive stage is not truly a bond unless the amount of the issue is materially less than the salable value of the land just as it stands.

To be sure, it is a general practice of mining men to

value their properties by multiplying the estimated mineral contents by the estimated net profit per ton. This, however, is manifestly just about as reasonable as to estimate the value of a railroad stock by multiplying the surplus earnings per share by the estimated life of the road. In this way one would obtain a valuation of more than \$500 for Union Pacific stock, even if the life of the road were placed at no more than 50 years, and for Reading more than \$2,000 per share.

The whole method, notwithstanding its general use, should be regarded as a piece of plausible statistical nonsense. The Commissioner of Internal Revenue in a circular issued February 23, 1913, in regard to the collection of the corporation tax, said: "Values as aforesaid should *not* be estimated on the basis of assumed salable value of the output under current operative conditions, less the actual cost of production. The value must be on the basis of the salable value en bloc of the entire deposit of minerals and mineralized property owned." The bond of an undeveloped coal company, if the amount of the issue materially exceeds the salable value en bloc, is really not a bond, but a stock masquerading under another name.

A West Virginia company a few years ago offered a so-called first mortgage 6 per cent. gold bond, secured upon a property stated to consist of 10,000 acres worth \$16,000,000. The bond circular made no statement of the amount of money which up to the time of the offer-

ing had been actually invested in equipment and development work, but apparently this amount did not exceed \$500,000. Adding to this \$600,000 raised by the sale of bonds the total investment was \$1,100,000. The sinking fund provision called for only two cents per ton, which was entirely inadequate. As an offset it was represented that the unmined coal amounted to 256,000,000 tons. The bonds were to mature in eighteen years, so that in order to provide a sufficient sinking fund production would have had to be at the rate of 1,666,600 tons per annum.

For a property in which only \$1,100,000 had been invested such a production was, and is, simply impossible. It requires an outlay of \$1,600,000 to \$2,500,000 varying according to geological and other conditions, to develop a producing capacity of 1,000,000 tons; and this means actual money expenditure, and not mere nominal cost of property. The book value of coal property, or the plant valuation, is usually from four to five million dollars per million tons of capacity.

The buyer of the bonds here referred to had not the slightest prospect of obtaining a reasonable return for his money. If such a company were to succeed all he could obtain would be a moderate rate of interest on his money, entirely too small in view of the risk he assumed. If it were to fail, as many such companies do, he would sustain almost a total loss. Buying such bonds is like paying par for a 5 per cent. common industrial stock with no assets behind it, and with no chance of an

increase in dividend. The buyer may lose, but he cannot win.

These details are given as a means of showing the difference between good and bad coal company bonds. Amongst these bonds there are in fact not many gradations. Most of them are either quite good or entirely bad. The investor in the bonds of such companies as the Pittsburg Coal Company, the Lehigh Coal and Navigation Company, and the Consolidation Coal Company and many other standard coal companies gets very good investments, worthy of his confidence. If the real bonds were not so good, there would be no object in making the counterfeits. As showing the general relations between earnings, capitalization, output, etc., the following aggregates covering five leading coal companies for the year 1913 are worth studying.

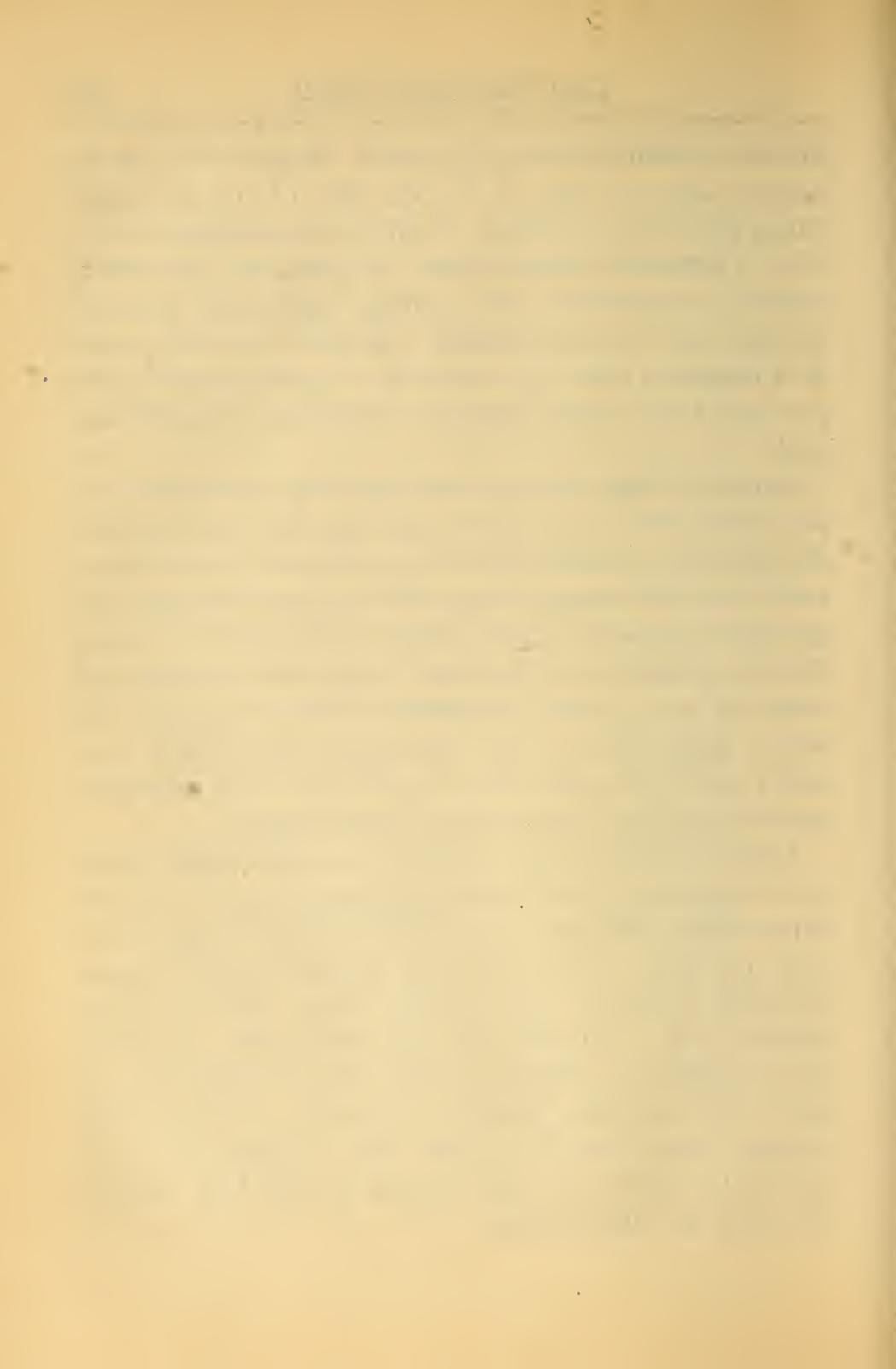
Gross receipts	\$ 74,582,879
Operating expenses	55,794,297
<hr/>	
Net earnings	\$ 18,788,582
Total debts	\$ 81,043,120
Capital stock	133,454,166
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Total capitalization	\$214,497,286
Plant valuation	\$177,446,063
Yearly production, tons	46,830,000

Of this total output, all but about 4,000,000 tons was soft coal. The five companies for which these figures are the aggregates are among the most successful in the United States; and it is therefore always improbable that a new company can show a lower ratio of expenses to gross earnings, or can safely carry a higher capitalization per ton of coal. The funded debt of a sound coal

property should not much exceed 50 per cent. of its salable value en bloc, or 50 per cent. of the aggregate value (at average prices) of all its outstanding securities. If the debt does exceed 50 per cent., the bonds should be secured by net earnings equivalent to about 200 per cent. of fixed charges. Furthermore, the bonded debt begins to look high whenever it much exceeds \$1.00 per ton of soft coal produced, or \$3.00 per ton of hard coal.

Ordinarily the sinking fund should be at least 5 cents per ton of run-of-the-mine coal; but this depends upon the relation of funded debt to coal output. If the debt is small and the output large, the number of cents per ton may be small and vice versa. Depreciation charges should amount to not less than 3 per cent. on the actual value of the physical properties of the company; and where such value is not obtainable the investor may safely take in its place 60 to 75 per cent. of the aggregate market value of outstanding capitalization.

Unless unmined coal reserves are exceedingly large, as in the case of the Reading Coal and Iron Co., proper depreciation charges can be more readily estimated in cents per ton. With a soft coal property these charges, including payments into sinking funds, should usually amount to 8 to 10 cents per ton, while with an anthracite property they should amount to 15 to 30 cents per ton. Yet insistence cannot be placed on depreciation charges, since some of the best and strongest coal companies do not show in their annual reports how much is set aside for depreciation.



XXI

Irrigation Bonds

BETWEEN 1880 and 1890 there occurred a speculative boom in irrigation enterprises which did much to bring this class of bonds into disrepute. Large amounts of money were obtained for irrigation works through the sale of bonds and stocks; great enterprises were projected; and extensive canals, some exceeding 100 miles in length, were planned and built. Too little attention was given to the questions of the utility of irrigation, and the profits to be derived from it, and nearly all of these schemes resulted in failure. They served to extend the area of irrigation, and incidentally to impoverish the investors who bought the bonds. In 1880 the irrigated area in the United States was probably about 1,000,000 acres, while in 1889 it was 3,631,381.

Irrigation, to be successful, requires intensive farming and involves a huge amount of labor per acre cultivated, together with great care in the application of water. It is not, in any sense, an easy or get-rich-quick method of farming. In this country farming generally is extensive rather than intensive, because land is abundant and labor is dear. It therefore generally pays better to economise on the labor by cultivating a large area through the use of machinery. It does not pay, under the prevailing agricultural conditions, to put forth the high labor ex-

penditure which irrigated land requires, because, with exceptions, the same crops can be produced more cheaply through extensive farming.

Still, as the density of population grows, intensive farming is bound to become more and more profitable, and irrigation to become more general. Already there are exceptions enough to the above broad rule, so that the area of irrigated land is doubling about once in ten or twelve years. These bonds, then, may again have their day; and not only for this reason but also to enable the investor to immediately recognize the occasional irrigation bond issues of doubtful value, this subject deserves some attention.

The principal irrigation bonds now on the market in the eastern states are the "irrigation district" bonds. The irrigation district is a minor civil division, constituted for purposes of taxation and is similar legally to a small municipality. The bonds are authorized by the voters of the district; their legality is passed upon by the district court; the tax levy for irrigation purposes is fixed by the county commissioners; and the tax itself is collected along with ordinary taxes by the county treasurer.

The lands are usually arid when the bonds are authorized and sold, and therefore these are virtually construction bonds—being issued not against actually existing assets and earning power, but against an undeveloped enterprise. If they were obligations of a strong municipality of high credit, instead of being those of a rural district, they would be first class bonds. Rural districts, how-

ever, are not distinguished either for their sound management, or for their scrupulous regard for the rights of capital; and therefore these bonds are semi-speculative. They are comparable in general character only with those of the smallest municipalities, and are broadly inferior even to these.

Bonds issued by companies operating under the Carey Act, passed in 1894 and amended in 1896, are better, as such projects are under the supervision of the government of the United States and of the given State. Plans and estimates must be filed and must be approved by the Secretary of the Interior, the State Land Commission and the State Engineer. The land is then withdrawn from the public domain, and given by the United States to the State. Later it is sold by the latter to the farmer at a nominal price of about 50 cents an acre. Meanwhile the State gives the irrigation company a prior lien on the land, and the title does not pass to the farmer until he has actually settled on the land and paid the company for his water rights. These usually cost him from \$25 to \$50 per acre, and are paid for in installments. When the payments are complete, the irrigation works are handed over to the farmers who use the water, and the irrigation company goes out of existence.

Such bonds, therefore, represent a temporary loan by the irrigation company under government supervision to the farmer. All the profit the company can get is the difference between the cost of construction and the aggregate price paid by the farmers for the works. The

bond does not represent any permanent investment, and is not attractive either to bond houses or to eastern investors. The bonds, while they are outstanding, are a lien on both the water rights and the land; but when they are issued they are virtually construction bonds. Their superiority over irrigation district bonds lies in the fact that whereas both classes of bonds ultimately depend upon the success of the project, the Carey Act projects are the more likely to succeed, because they are the most carefully examined in advance by real experts in matters of irrigation.

There is a third important form of irrigation which should be mentioned, since it competes with these two, even though under this third form no bonds are issued. Reference is made to the irrigation projects conducted by the United States government under the National Irrigation Act of 1902. Under this form the Secretary of the Interior lets contracts for the construction of irrigation works and fixes the annual instalments to be paid by the settlers. The works are built at the expense of the government, but the settler must pay to the government the charges against his tract of land, and must reclaim at least 50 per cent. of his land for agricultural purposes within a reasonable time. When the payments for the given area are barely completed by the settlers, the management of the works passes to the land-owners, subject only to the supervision of the Secretary of the Interior; but the title to the reservoirs and works still belongs to the United States.

The following are some of the more important statistics of irrigation collected by the United States Census Bureau:

	1909	1899	1889
Number of farms in arid region..	1,439,023	1,095,675	.....
Area (acres) in arid region....	1,161,385,600	1,161,385,600	.....
Improved land in farms (acres)..	173,433,209	119,709,592	.....
Number of farms irrigated	157,862	107,716	54,136
Acreage irrigated	13,739,499	7,527,690	3,631,381
Area included in irrigated projects	31,112,110	.....	.....
Total cost of irrigation systems...	\$304,699,450	\$67,482,261	.....
Average cost per acre	\$15.76	\$8.89	.....

Of all the farms in the arid or semi-arid region, 11.0 per cent. were irrigated in 1909, as compared with 9.8 in 1899. The acreage irrigated in 1909 has been classified according to the State and Federal laws under which the works were built or operated as follows:

National Irrigation Act of 1902.....	395,646 acres or	2.9%
United States Indian Service.....	172,912 acres or	1.2
Carey Act	288,553 acres or	2.1
Irrigation District	533,142 acres or	3.9
Cooperative enterprises	4,646,039 acres or	33.8
Commercial enterprises	1,444,806 acres or	10.6
Individual and partnership	6,258,401 acres or	45.5

Of the total acreage about 84 per cent. was controlled by cooperative, individual and partnership enterprises. Of the remaining 16 per cent. about 10 per cent. is included in what have been classified as commercial enterprises—meaning those supplying water to parties who have no interest in the work. Of this 10 per cent., one-third is under the National Irrigation Act and one-tenth under the Indian Service, so that the striking fact is brought out that not more than 6 per cent. of all the

irrigation projects in the United States are now conducted in such a way that bonds of private corporations either are, or can be, outstanding against them.

All the reclamation and Carey Act enterprises, and many of the commercial enterprises are eventually to become cooperative. Hence the bonds of private irrigation companies form so small a class that they are hardly worth the attention of investors. Furthermore, they are so difficult to analyze that they should be let alone. It is only after the most thorough and personal examination right on the ground that it is safe to buy such a bond. Even a personal examination involving heavy traveling expenses, may quite fail to reveal the truth since the typical investor is certainly not an irrigation expert. In practice, then, irrigation district bonds are the only class to be ordinarily considered, and these are semi-speculative and should be subjected to the most careful inquiry.

XXII

Light and Power Preferred Stocks

EXCEPTING street railway stocks, public utility preferred stocks are as a class about the most difficult of all securities to analyze or judge. With them analysis often amounts to little more than guesswork, no matter how much painstaking research one may make. The principal reason for this unhappy state of affairs is that thus far the architecture of public utility companies is very complicated and quite incapable of being understood except by insiders. A great many, and probably a majority, of the operating companies are owned or controlled by holding companies. There is nothing essentially objectionable about a holding company, provided only it furnishes the investor with the information to which he is entitled; but this most of them neglect to do.

As a usual thing, the parent concern, or holding company, owns a portion but not the entirety of the capital stocks of its subsidiaries, and owns also some of the notes of the subsidiaries but does not own the bonds. In cases where the subsidiary has no short term notes outstanding, it very frequently owes the parent concern for advances made. Thus the subsidiary has outstanding bonds or notes or both in the hands of the public, and stocks partly in the hands of the public, and partly in

the treasury of the holding company. In this way very complicated inter-corporate relations are established, and the investor is presented with a tangle of incomplete data so puzzling that its meaning can really not be solved. For these reasons any attempt to estimate the asset value of a light and power preferred stock is often futile, and about the best method of judging these stocks is to be guided first, by the architecture of the company, or system of companies; and second, by the earning power of the stocks.

Before discussing the architecture of these companies, it is necessary to state what is meant by "income accounts" and "balance sheets." Many of these companies present certain meaningless figures under these titles, and the investor must distinguish sharply between the real thing and the empty form. A good income account will usually contain in one way or another the following items of information:

- A. Gross earnings, subdivided so as to show what portion is derived from light and power business, and what from street railway business.
- B. Operating expenses, subdivided, showing first, the cost of ordinary operations; and second, the cost of maintenance, repairs and sometimes depreciation.
- C. Net operating income—this being the difference between A and B.
- D. "Other income"—this being derived chiefly from investments.
- E. Total net income—this being the sum of C and D.
- F. Fixed charges subdivided showing interest, taxes and depreciation.
- G. Surplus for dividends, this being E minus F.

The omission of some of these items does not condemn a company, for if it did they would nearly all be condemned. It is a common practice not to subdivide the items as herein described; but the managements of the stronger and more reliable companies are usually willing to give the stockholder any or all the foregoing items of information. Passing on to the definition of a "balance sheet," the following items should be shown:

ASSETS:

- Real Estate and buildings
- Gas mains, transmission lines and tracks
- Goodwill, franchises and patents
- Stocks and bonds owned
- Advances to subsidiary or affiliated companies
- Supplies and materials
- Notes and accounts receivable
- Cash on hand
- Other miscellaneous assets

LIABILITIES:

- Common stock
- Preferred stock
- Notes outstanding
- Funded debt
- Due to subsidiaries
- Notes and accounts payable
- Accrued interest and taxes
- Reserve funds of all kinds
- Accumulated surplus

In the following discussion "annual report" or "report" is used to mean both income accounts and balance sheets corresponding roughly to the foregoing description, and giving a large part of the information herein specified. As an example of a perfectly objectionable so-

called annual report, which shows nothing and treats the investor as if he had no rights whatever in the company he owns, the following are the items in the 1914 report of a well known public utility concern. All the items are quoted from the report.

Consolidated Income and Surplus Account

Income from operations, interest, dividends, commissions, etc.
 Deduct—Operating expenses of subsidiary, administration and general
 Deduct—Bond interest on parent company bonds.
 Add—Surplus as of January 1, 1914
 Deduct—Dividends paid on parent company preferred stock
 Deduct—Depreciation of securities
 Remainder equals balance carried to balance sheet

Consolidated Balance Sheet

Assets	Liabilities
Investments in stocks and bonds	Preferred stock
Investments in short term notes	Common stock
Notes receivable	Parent company bonds
Accounts receivable	Accounts payable
Salary and expense funds	Accrued bond interest
Cash on hand	Surplus per above account
Furniture, fittings and tools	
Goodwill of subsidiary	
Discount on securities issued	

One glance at a report like this should be sufficient to drive any investor away. The report shows absolutely nothing of the slightest interest or value to the stockholder. From it he cannot learn the gross, net or surplus earnings of the company; the percentage earned on the stock; the amount of fixed charges; the liabilities of the company, including its subsidiary; the current assets; the current liabilities; or the net working capital. The stock of such a company, if it became very strong

in a run-away bull market, might be worth buying on margin with a sum of money which one is willing to gamble away; but to purchase the stock with investment funds from which one expects a permanent return is the height of folly.

From the point of view of architecture then, let us mention six principal types of public utility companies, naming the most commendable first:

1. An operating company, which furnishes good income accounts and balance sheets.
2. A holding company, which furnishes good income accounts and balance sheets, covering itself and all its subsidiaries en masse.
3. A holding company, which furnishes reasonably good income accounts and balance sheets for itself and also for its subsidiaries, but not for both combined.
4. A holding company which furnishes reasonably good income accounts and balance sheets for its subsidiaries, but not for itself.
5. A holding company which furnishes income accounts and balance sheets for itself, but not for its subsidiaries.
6. An investment company, or a holding or operating company, which makes no reports at all, or else meaningless reports such as the one above quoted.

The degree of regard in which the preferred stocks of these various companies should be held, or the type of the stock themselves, may now be defined:

1. Very high grade, providing surplus earnings exceed dividend requirements by 50 to 100 per cent. of the same.
2. Almost equally high grade, there being no substantial difference.
3. Semi-speculative, since the current assets may consist of bills receivable by the companies from each other, while

the current liabilities consist of bills payable by the companies to the public—thus making the net working capital wholly fictitious, or perhaps concealing large net debts.

4. Speculative, since the debts or contingent liabilities of the holding company may offset all the apparent value in its subsidiaries, and since this form of company architecture is open to the same objection as Number 3.
5. Highly speculative, because the real value of any system of companies lies in the operating subsidiaries, and because in this case nothing is shown regarding those subsidiaries.
6. A rank speculation, because investment company assets are so liquid and so rapidly changing that they can vanish over night, and because no essential information is given.

These descriptions relate of course to companies showing average earning power, and do not take into consideration differences in earning power. Having considered the architecture of the company, the investor in preferred public utility stocks must next consider to what extent his rating of the given stock should be raised from the foregoing by exceptionally large earning power, or lowered by unusually poor earnings. In the cases of Numbers 1 and 2, earnings are easily calculated; with Number 3 a rough estimate can be formed; and with Number 4 a very rough estimate; Numbers 5 and 6 should be outlawed by the investor and left entirely to the speculator who wants to take a chance of a haphazard kind.

There are, however, a great many moderately strong public utility concerns which come under the classification covered by Numbers 3 and 4. Hence it is necessary to say a word as to methods of estimating the earnings

and liabilities of such companies. With these companies the liabilities, in the order of their priority, are:

- Subsidiary bonds
- Subsidiary notes
- Subsidiary stocks in hands of public
- Parent company bonds
- Parent company notes
- Parent company net current liabilities
- Parent company preferred stock
- Parent company common stock

It will be observed that with the ordinary holding company here referred to, even the stocks of the subsidiary companies rank ahead of the parent company bonds, because the latter derive their income from the dividends on these stocks; and if the dividends are not paid the income disappears and the bonds must default. There are of course some exceptions to this rule in the cases of subsidiary bonds held by the parent concern, or of non-dividend paying subsidiary stocks in the hands of the public. As a usual thing, however, the preferred stock of this type has so many liabilities ahead of it that the presumption is that it is a poor investment unless the income accounts prove the contrary.

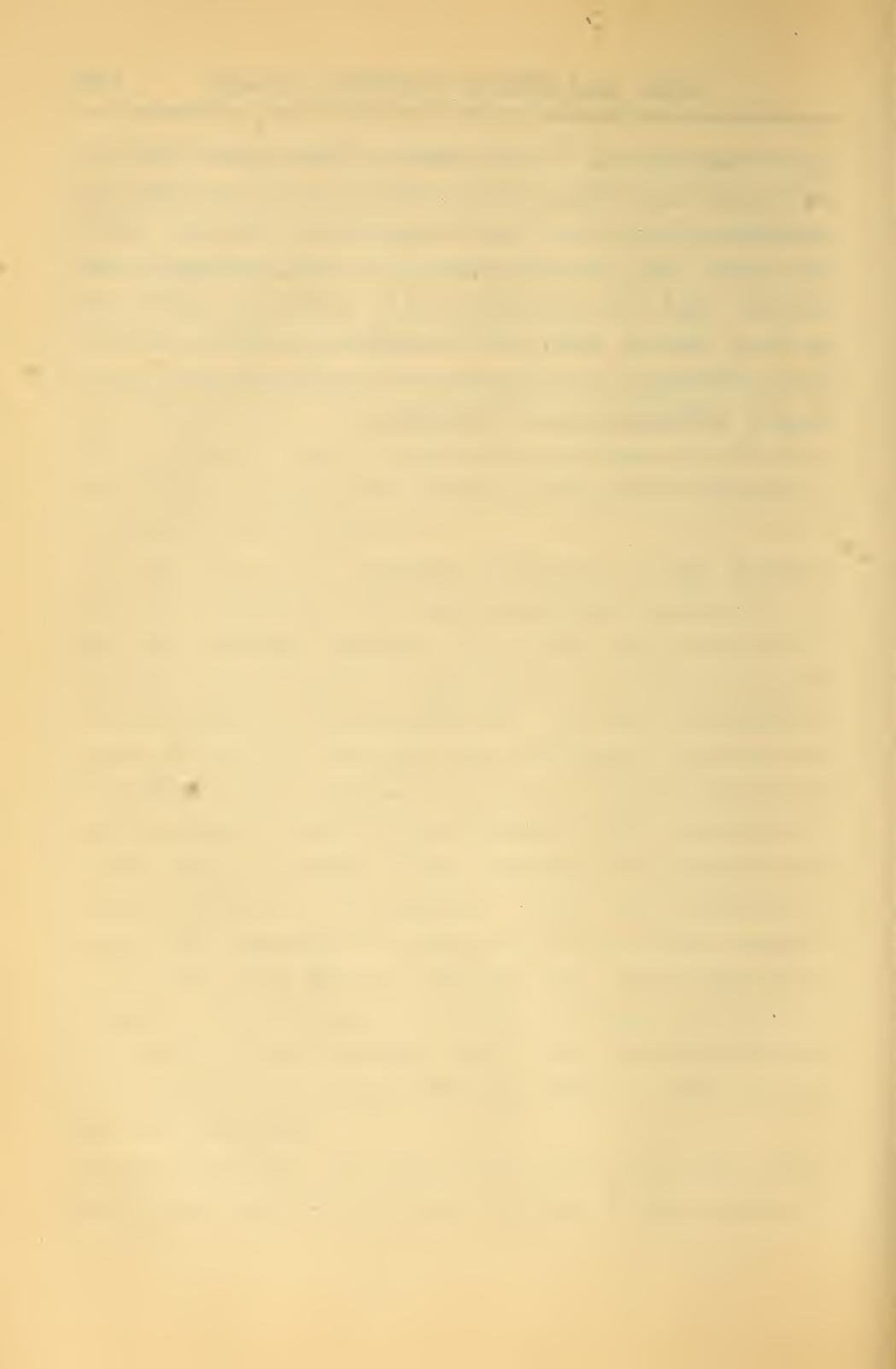
With such holding companies the income available for the parent concern must also be estimated from the reports of the subsidiaries. The parent company usually styles the dividends and interest it receives from its subsidiaries as "total income" or "gross income" or "gross earnings"; but the investor should remember that these names do not mean operating earnings at all. The most practicable method is to give up the question of

gross operating earnings, and proceed at once to try to find out the total net income of the parent concern. To do this one should add to the above "total income" or "gross earnings" of the parent concern the surpluses after dividends of all its subsidiaries. If any one of these subsidiaries shows a deficit, this should be deducted. In doing this, the leading financial manuals are more useful than the reports of the companies themselves, since in these manuals the statistics of all the subsidiaries are given with those of the parent company, or immediately thereafter.

In the case of a company belonging to the fourth class just mentioned, the only practicable method is to treat the holding company as a shell, and regard its available income as if it were known to consist of the excess earnings of the subsidiaries. By this is meant the excess of surplus earnings over dividend payments to the public, and of course it must be assumed that the parent concern receives the dividends on the amounts of stocks which it holds. These amounts are almost invariably stated in the manuals. With such companies as these the aggregate current assets and current liabilities of the subsidiaries constitute the most important evidence. Any estimate of surplus earnings is so unreliable as to be of but little value, but estimates of net working capital are somewhat more reliable, and a great deal more valuable.

Notwithstanding all these intricacies good light and power preferred stocks must be given a high rank as

stock investments. It is difficult to find them, and to recognize them when found, but they are none the less desirable when found and recognized. Probably after the public utility business has been more thoroughly developed and standardized, more uniform accounting methods will be used, and subsidiaries will be consolidated with their parent concerns to such an extent as to largely eliminate these intricacies.



XXIII

Railroad Preferred Stocks

RAILROAD preferred stocks are neither so numerous nor so popular as they were ten years ago. A great many of the preferred issues of former times have been retired, and it is not the fashion now to make new issues of this sort. They are not so readily absorbed by the public as junior bonds, and the cost of capital raised in this way would be somewhat higher than the cost of that raised through the issue of junior bonds.

In actual character these issues are much like debentures; for they are fairly secure although not having mortgages or physical assets behind them, and they do not generally share in any bonuses or extra dividends which go to the common shareholders. Another point of resemblance is that it is almost as much of a reflection upon the credit of a railroad to omit preferred dividends, as it is to default on a debenture bond or note. The latter involves receivership, where the former does not, and this is one of the principal points of difference.

The preference enjoyed by these stocks is a safeguard but not a guarantee. It occasionally happens that a common dividend must be reduced or passed, while a preferred dividend is not disturbed; but the ill fortune required to cut off preferred dividends is only a few de-

grees worse than that required to suspend common dividends. To illustrate this point, let us observe that upon the basis of the 1910 railroad earnings—1910 being the most recent year when railroad business was approximately normal—it would have required only a 12 per cent. decrease in gross earnings to wipe out the surplus available for common dividends, whereas a decrease of 14½ per cent. would have also wiped out the surplus for preferred dividends. This is of course upon the hypothesis that expenses and charges remain unchanged. The point is that in the typical case preferred dividends are only moderately more secure than common dividends.

Good standard railroad preferred stocks earn at least 1¾ times their dividends, or 175 per cent. thereof. A stock which pays 4 per cent. cannot be considered up to standard unless it earns 7 or more, and a stock which pays 5 should earn at least 8¾ per cent. A preferred issue earning less than 150 per cent. of its dividends should be considered highly speculative.

In observing the earnings available for dividends it is necessary to make allowances for the very general lack of sufficient depreciation charges. The sums which railroads spend out of operating receipts for maintenance, repairs and depreciation do not fully offset the actual deterioration in the roadbed, equipment and terminals. Later on this deterioration has to be provided for, either out of earnings, or else by new bond or note issues; and in either case the deduction from earnings, or the in-

crease in interest charges, injures the position of the stocks. Hence in calculating the earnings really available for dividends one should ordinarily deduct from the "surplus for dividends" as shown by the annual reports, a sum equal to about $1\frac{1}{2}$ per cent. on the valuation of "roadbed and equipment" as given in the balance sheet. The entire "surplus for dividends" is then considered as being available primarily for the preferred stock, and secondarily for the common.

Those who desire to use scrupulous care in the analysis and selection of preferred railroad shares should study not only the surplus for dividends, but also the intrinsic values behind the stocks. Stock values are seldom or never represented by physical property in the case of railroads, but rather by the intangible elements of value such as good will, rights of way, partial monopoly of a transportation field, ownership in or influence over mining or industrial concerns, strong banking support, and the like. Nevertheless, these intangible values are capable of being estimated. The method of doing it is entirely similar to that described in Chapter 27, which treats of railroad common stocks. Hence this method will not be treated here.

As strict investments without regard to their speculative possibilities, these preferred shares are seldom very attractive. They usually yield only 4 7-8 to 6 per cent., whereas junior bonds yield almost as much. At this writing some of the yields on current prices are as follows:

Atchison, Topeka and Santa Fe pfd.....	5.10%
Baltimore and Ohio pfd.....	5.67
Chicago Milwaukee and St. Paul pfd.....	5.60
Norfolk and Western pfd.	5.00
Reading Co. 1st pfd.	4.84
Reading Co. 2nd pfd.	4.97
Union Pacific pfd.	4.97

It is not in the least difficult to obtain junior bonds, especially of industrial companies, which show yields equal to these, together with a much higher degree of safety. Of course a bond yielding 5.67 per cent. would hardly be very highly secured but there are plenty of them, especially of the industrial type, which are at least as secure as some of these preferred railroad stocks.

As speculations, however, these stocks occasionally offer very substantial profits without much risk. In the latter part of every bear movement a study of earnings readily answers the question whether a preferred dividend is safe. At such times good stocks of this type can be bought to yield 6 or even $6\frac{1}{2}$ per cent. and sometimes more, and the investor can be pretty sure that within one to three years he will be able in addition to the income to obtain a profit of 10 or 20 points on the principal. This indeed is the proper use of preferred railroad stocks. To hold them year in and year out without regard to changes in earnings and just as if they were mortgage bonds, is a distinct error in policy. One can never be certain in advance that the misfortunes of a business depression will not cut off his preferred dividends. Hence the shrewd investor will buy these stocks when security prices are low, and invariably sell them and reinvest the funds in safer and more stable securities when stock prices become high.

XXIV

Street Railway Preferred Stocks

AMONG the essential points, without which one cannot intelligently judge the value of a street railway stock, are the following: (a) Capital stock, (b) bonded debt, (c) current assets, (d) current liabilities, (e) gross earnings, (f) net earnings, (g) surplus earnings, (h) income from other sources, and especially from sales of light or power, (i) mileage, (j) passengers carried, (k) free transfers issued, in cases where rides paid for with such transfers are counted among the passengers carried. With these facts it is possible to learn whether net or surplus earnings are made without injury to the property through lack of sufficient maintenance expenditures, and in that way to form a pretty clear conception of the real value of the stocks.

In determining whether or not street railways are over-capitalized, it should be borne in mind that their operating expenses are lower than those of steam railroads, averaging only about 60 per cent. of gross, as compared with 69 per cent. for steam roads. As an average a street railway should show annual gross earnings equal to about 21.5 per cent. of the true value of its total capitalization; but it is perhaps easier to state the matter the other way about by saying that its total

capitalization should not ordinarily be more than 4.7 times its gross earnings. This of course applies only to the road operating under typical conditions, which practically means a road whose gross earnings are more than \$10,000 per mile, upon which the average journey is not more than two to four miles, and the average receipts per passenger exceed $4\frac{1}{2}$ cents. Where operating expenses are exceptionally low on account of exceptional advantages, such as high fares per passenger, or an unusual density of traffic, capitalization may exceed 4.7 times gross without being really excessive.

This gross-earning test for capitalization, while a good one and well worth using, is by no means final; and the test of comparison with net earnings should also be applied. Under ordinary conditions capitalization should not exceed 11.5 times net earnings per annum; and this test is more reliable than the foregoing one because no allowances have to be made for exceptional operating advantages. Any such advantages are already included in the total of net earnings, since they can have no further effect than to reduce operating expenses. Hence, it is seldom indeed that a street railway company can be capitalized for much more than 11.5 times its yearly net earnings without being over-capitalized.

The principal exception to this rule is the case of roads operating lighting and power plants; for the expenses and charges of these plants consume a smaller proportion of earnings than is the case with street railway plants; and, therefore, capitalization may properly be

higher. With such companies the gross earnings test may be applied by taking 5.4 times the gross income from lighting and power business, plus 4.7 times the gross income from the street railway business, as the theoretically proper capitalization of the company. The net-earning test may be applied by taking 12.1 times the light and power net, plus 11.5 the street railway net as the proper capitalization.

Having thus obtained as above the estimated intrinsic value of the total capitalization of the given company, the value of its preferred or common stock is easily approximated. To find the value of the preferred, one need only deduct the par value of the bonded debt, plus the excess of current liabilities over current assets, (if there is any such excess) and divide the remainder by the number of preferred shares outstanding. In like manner the approximate value of the common stock may be obtained by deducting bonded debt, current excess of liabilities and preferred stock from the total value of capitalization, and dividing the remainder by the number of common shares outstanding.

These tests are, of course, not absolute, but the net-earning test is pretty reliable, and in practice may be considered twice as reliable as the gross-earning test. Further light may be thrown upon the point by studying operating expenses, for where these are very high or very low—as compared with 60 per cent.—the gross-earning test is almost worthless. A company which receives a gross income equal to less than 4.5 cents per

passenger carried must have great difficulty in keeping net earnings up; for on the average it costs about 2.7 cents to carry a passenger. Indeed, for the really strong companies receipts per passenger average very close to 5 cents.

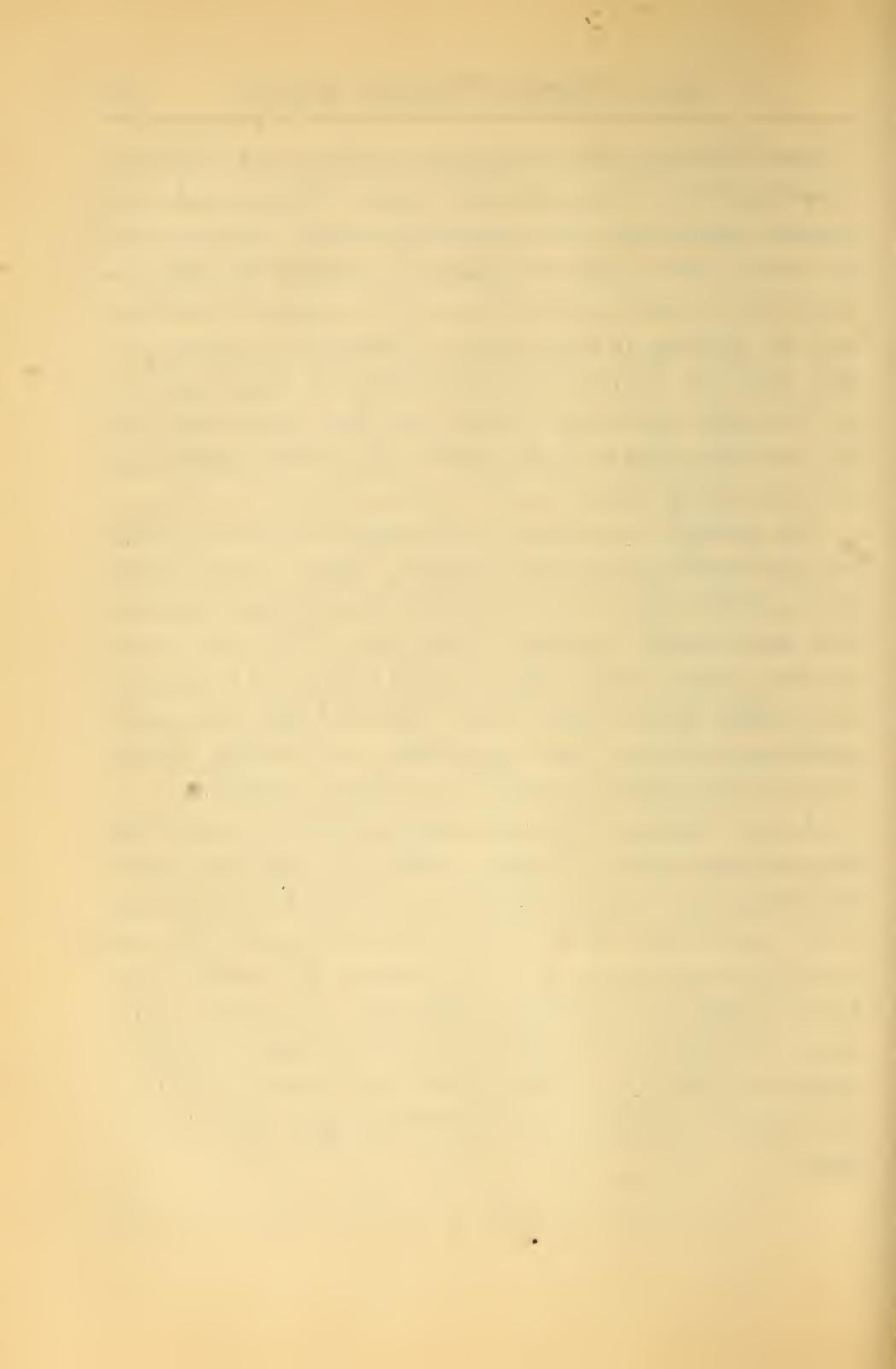
Gross earnings per mile, especially in the case of interurban roads, throw valuable light upon the truth or fiction of the operating ratio; for where the traffic is too light operating expenses necessarily consume a very large part of gross earnings. Even under the most favorable conditions it takes about \$500 per mile for maintenance of way and structures, about \$645 for maintenance of equipment, and about \$640 for the operation of power plants. The heaviest expense, however, is for operation of cars, including wages; and under the most favorable conditions this requires about \$2,380 per mile—even where the traffic is light. It is very seldom that total operating expenses can be reduced below \$5,000 per mile, no matter how light the traffic may be. Hence it is that gross earnings of less than \$6,000 per mile ought immediately to lead the investor to doubt the values of a company's stock.

Where the gross per mile and the average fare per passenger are high enough to justify a low operating ratio, or where this ratio is high enough to make it pretty clear that it covers all operating expenses, and obviates drawing upon the company's capital to pay such expenses, one may safely base his estimate of the value of the stock upon its surplus earnings per share.

Street railway stocks sell higher as compared with their earnings than steam railroad stocks. There is no apparent reason why they should do so, as their earning power is more subject to popular attack; but they always have done so, and it is safe to assume that they will do likewise in the future. Ordinarily a street railway stock is worth about 15.0 times its yearly surplus earnings per share; and when one has made sure that the earnings shown by the books are actually made, this is a pretty safe test.

Nor should any alarm be felt over a company which has practically no working capital. Steam railroad companies ordinarily carry an amount of cash and other current assets equal to about 10 per cent. of the total value of their plants; and in the case of industrial companies it averages about 6 per cent. Some of our best street railways, however, have practically no working capital, or excess of current assets over current liabilities.

If one wishes to be extremely careful in estimating the intrinsic worth of such a stock, let him first apply both the gross-earning and the net-earning tests, and then after examining the operating expenses carefully, and reaching a conclusion as to the amount of surplus really earned, apply the surplus-earning test. If a stock stands these three tests well, especially if the company shows a moderate excess of current assets over current liabilities, it should be regarded as a decidedly safe stock investment.



Industrial Preferred Stocks

METHODS of analyzing industrial preferred stocks should differ from those employed in the study of industrial bonds, chiefly because with the former the question of assets is less important, while the question of operating results is far more important. It would hardly be reasonable to expect preferred stocks to have behind them any large excess of assets, because historically the bonds and preferred stocks of most industrial companies at the time of formation fully covered their entire assets, while the common stocks were issued against goodwill and future growth. It is proper to demand that a bond, in order to be considered a high grade security, should have behind it assets of 125 to 150 per cent.; but it would be unreasonable to demand as much of an industrial preferred stock.

These stocks are, moreover, entirely different from railroad issues, in that manufacturing and industrial business is essentially different in character from railroad business. Railroad revenue is by nature a sort of a tax upon the business of all other industries and persons. Our railroads in themselves produce nothing, but merely assist indirectly in the productive activities of others by facilitating the distribution of goods. Freight charges are therefore a form of taxation and are in general sub-

ject to the economic principles which should govern taxation. Because of this nature of the business done, railroads are not self-supporting, and should not be expected to produce all the new capital which they require. On the contrary, they always have drawn, and probably always will draw, a considerable part of their new capital from other industries.

Manufacturing and industrial companies, on the other hand, are, or should be, self-supporting—by which it is meant that they should produce, or save out of earnings, all the capital required for their support. In consequence of this essential difference, railroad companies are usually capitalized at about twenty times their annual net earnings, while good industrial companies are capitalized at only about ten times their net earnings; and the whole manufacturing industry of the United States, according to the Census, is intrinsically worth only about five times its annual net earning power. Of this fundamental difference between railroad and industrial companies, the pith is, that it is proper and conservative for a railroad company to absorb more new capital than it produces, whereas an industrial company which does the same thing is apt to be in an unsound condition.

Nor can this difference be eliminated, for new capital must be produced by some of our industries; and it can hardly be produced by any except those which are essentially productive rather than parasitic. Hence the argument that financial methods which are good enough for railroads may also be practiced with impunity by industrial concerns should be regarded as fallacious.

Indeed the holders of preferred stocks of this class should in general be opposed to the increases of capitalization. A sound industrial corporation can ordinarily save out of earnings all the new capital required for its own expansion. There are, of course, exceptions, especially in the case of acquisitions of extensive new plants. If these plants, however, are purchased to eliminate competition, with a view to closing them down, or to using them in place of old plants already owned, which are themselves to be closed down—then their acquisition is not a proper reason for the issue of new securities. Their purchase should be made out of earnings.

An inspection of the finances of leading industrial companies quickly discloses the fact that those whose preferred stocks are in high repute have resorted to new capital issues only to a very small extent. Such issues for the purpose of providing working capital are especially objectionable. The net earnings of the leading industrial companies of the United States average about 10 per cent. of their entire capitalization, while those of all manufacturing companies, according to the Census, average about 20 per cent. Hence, a company which has to resort to increased capitalization to supply working capital is presumably not in a strong position, and its preferred stocks should not ordinarily be regarded as a first class investment.

Moreover, the existence of a bonded debt usually detracts more or less from the investment qualities of the

preferred stock. It is not meant that industrial companies should not finance themselves through bond issues; for on the contrary, capital thus secured is usually economical. It is meant, however, that if the interest charges, which must be paid in advance of preferred dividends, are heavy, the dividends are proportionately less secured; and also that if the bonded debt covers more than 35 or 40 per cent. of the assets of the company, the value of a preferred stock, in case of dissolution, would probably be small.

In spite of these considerations, some of our best industrial preferred stocks have bonds ahead of them. In these instances, however, either the bonded debt is small as compared with the total assets, or else the earnings available for dividends on the preferred stocks are exceptionally large.

Working capital is also an excellent, and almost necessary, test of the investment value of these preferred stocks. It is, however, not so much the amount of working capital which should be examined, nor is the amount of working capital per preferred share especially significant. The essential question is whether the market value of the company's securities reflects the increase in the working capital which is shown by the company's balance sheets. Of course by working capital is meant excess of current assets over current liabilities; and fictions of bookkeeping are employed in calculating these items often enough, so that it is not safe to assume that this excess truly represents the amount of working capital actually possessed.

If the working capital shown by the balance sheet is actual, it is almost certain to be reflected by an increase in the market value of the company's securities, or at least by a relative increase. If the general list is advancing, the securities of such a company will rise more than those of other companies; if it is declining, its securities will decline less than those of other companies. Hence, when balance sheets exhibit a pretty steady and large increase in working capital, which is not at all reflected in the average market value of the company's stocks, one may be pretty sure that the increase consists largely of bookkeeping fictions.

The earnings of a good industrial preferred stock should ordinarily be at least double the dividend rate; for allowance must be made for the large shrinkage in earnings which invariably occurs in years of depression. An industrial company which is in a strong position can safely draw upon surplus to a limited extent; but ordinarily a company which cannot earn its preferred dividend in good years and bad is not in a very strong position. Among the leading preferred industrials there are very few of high standing whose earnings do not amount to at least twice the dividend rate.

Stability of earnings should also be considered, but with these stocks it is not an especially important consideration. If the average of earnings is satisfactory, and if even in lean years a company does not fail to earn its preferred dividend, it is not a detriment of much consequence if the shrinkage of income in times of depression

is pretty large. In this respect preferred industrials are in a different position from the common issues, not only because they have a prior claim upon earnings, both current and accumulated, but also because they generally represent real value, whereas the common stocks are more apt to represent equities, good-will and future prospects.

For the practical investor the following rules may be laid down, subject of course to a reasonable variation where exceptional conditions exist.

Increases of capitalization, except for the purpose of acquiring new plants, which carry with them a proportionate increase in the volume of business done, should at once arouse doubts as to the investment value of a preferred stock.

Earnings available for preferred dividends, in order to render the issue high grade, should be about double the dividend rate; and in the case of a company having a bonded debt, they should be more than double.

Working capital, as disclosed by balance sheets, should show an increasing tendency, except in years of business depression; and these increases should not ordinarily be regarded as genuine, unless they are reflected in the prices of the company's securities.

The bonded debt should not in any event exceed 50 per cent. of the aggregate market value of all outstanding securities; where it exceeds 35 per cent., earnings on the preferred stock should be exceptionally large.

Industrial preferred issues which stand these tests

may be bought with little or no hesitation, even under unsatisfactory business and political conditions. Indeed, such issues are good investments and are likely to gain upon railroad investments in popularity. The yield to be obtained by their purchase is much larger than in the case of railroads, and the additional risk is not an important consideration.



XXVI

Mill Stocks

MILL stocks are, of course, industrial stocks of the manufacturing type; and generally speaking, an industrial-manufacturing proposition is quite too speculative to be called by so dignified a word as "investment". This speculative character is based principally upon the violent fluctuations in earnings; and mill earnings are particularly subject to these violent fluctuations. A student of the industry, unfamiliar with the history of the prices of mill stocks, would certainly draw the conclusion that such issues would be highly speculative—in almost the same class with mining shares, for example.

As an instance of this violent change in earnings, the Boston News Bureau said on July 23, 1912: "It is estimated that about 35,000 out of the total of 54,000 New Bedford looms are idle, which would indicate that 66 per cent. of the total output has been shut off. The actual enforced curtailment is not so large, but is nevertheless large enough." It was also shown that the Manomet Mill, which is among the strongest of all those in New Bedford, earned in 1911 only \$174,562 against \$299,848 in 1910. Here was a decrease of \$125,286 in net earnings, but dividend payments were reduced only \$10,000. These were \$160,000 for 1911 against \$170,000 for 1912.

These facts serve to illustrate the general tendency of mill management. Dividends are far more constant than earnings; and in boom years the mills do not **pay** in dividends anything like the amounts they could afford to pay, but rather accumulate the surplus for a rainy day.

Forty-two New England mills in 1911 paid average dividends of only 4.2 per cent. as compared with 7.2 per cent. the previous year; and these forty-two mills represented an aggregate capital of \$37,000,000 and about 3,700,000 spindles. In absolute amount the dividend payments were reduced from \$1,815,700 to \$1,059,400. (Of course the above averages, namely, 7.2 and 4.2, are simply the averages of the individual dividend rates.) Here was a shrinkage in dividend payments of \$756,300 and the decline in surplus earnings was three or four times that amount.

These facts make it clear that earnings fluctuate enough to render the stocks very unstable and speculative; but, on the contrary, the stocks are exceptionally stable and a majority of them are fairly good investments. As to the matter of stability there has been no little misunderstanding. A well-known authority on investments said: "Stocks as a class sadly need even the slight supervision that listing achieves; and as for stability even high-grade shares, such as those of New England banks and mills, suffer badly at times in liquidation, for lack of a broader market."

Such an inference, if based upon changes in earnings, is natural enough, but it does not tally with the facts.

Intrinsically railroad stocks ought to be more stable than mill stocks, because earnings are more stable, and because railroad income is in the nature of a sort of a tax upon all other business—a tax most of which has to be paid in fat years and lean. Mill business, however, is a question of new clothes, and when times are hard people wear their old clothes. In spite of this reasoning thirty representative mill stocks during the year 1907 declined only from \$121.60 to \$97.76, whereas twenty representative listed railroad shares declined from \$131.95 to \$81.41. The mill shares declined \$23.85 or 19.61 per cent., while the railroad shares declined \$50.54 or 38.31 per cent.

Listing, generally speaking, is a decided advantage, and this is particularly true of the stocks of large corporations; for such securities need a wide market composed of a vast number of investors. The principal advantages of listing are the supervision and publicity involved, and the constantly ready market in which the investor may always sell without delay. However, there are also disadvantages, and this is especially true of small companies which do not need a wide market. Chief among these disadvantages are the large speculative dealings and price movements which naturally result from an ever-ready market; and also the heavy selling in times of financial disturbance. At such times if a business man in need of funds with which to save himself from insolvency owns both mill stocks and railroad shares, he cannot perhaps sell the former at all

because the private market for them almost disappears; but he can sell the railroad shares on the Stock Exchange at some price, and he accepts the price even though it be very low, rather than go into bankruptcy.

Thus the higher stability of mill stocks is partly genuine and partly fictitious, by which is meant that at a time like 1907 their prices are stable partly because there are not any prices, there being practically no market. Even this fictitious kind of stability, however, has its advantages, since when the market reappears the stocks sell somewhere near their old prices.

In 1904 Sydney J. Chapman, Professor of Political Economy in the University of Manchester, England, wrote of the British cotton industry. "There can be no question that our most serious rivals are the Americans. In 1840 it was asserted that England possessed an advantage in spinning over the United States of 19 per cent. in the cost of production. In 1878 the working hours (English) had fallen to 57, and the production had risen to 975 yards (per week of 60 hours). An increased production of 23 per cent. is thus due to improvement in the processes of manufacture. In 1865 there were 24,151 persons employed in Massachusetts in the production of cotton goods, and they produced 175,000,000 yards. In 1875 the operatives numbered 60,176 and their product was 874,000,000 yards. The operatives had increased 150 per cent. and their products increased 500 per cent. The increase of production due to improved methods was thus in England 23 per cent.

and in Massachusetts 100 per cent. Certainly a few years later an American weaver was managing more looms than an English weaver."

Meanwhile the English weaver a few years ago was managing more looms than the German, or French, or any other. This brings out the strong point about our cotton mills, which is that the efficiency of our labor is so much higher than that of foreign labor that it partly offsets the higher wages. Any lowering of the tariff may practically compel still higher efficiency on the part of both employer and employee. In particular it may be necessary to increase the outlay of capital for new and improved machinery with which to make further economies in the cost of production.

The stability and investment merit of mill stocks is clearly due to the general conservatism of management. Mill managements have not acquired the habit of capitalizing the property at valuations so high as to cover present assets and future growth. Not only is total capitalization usually moderate, but funded debts, where there are any, are ordinarily very small. Thirty-seven cotton mills having a total capitalization of \$29,360,000 have outstanding only \$2,720,000 of bonds. Indeed only seven of the thirty-seven have any bonded debt at all.

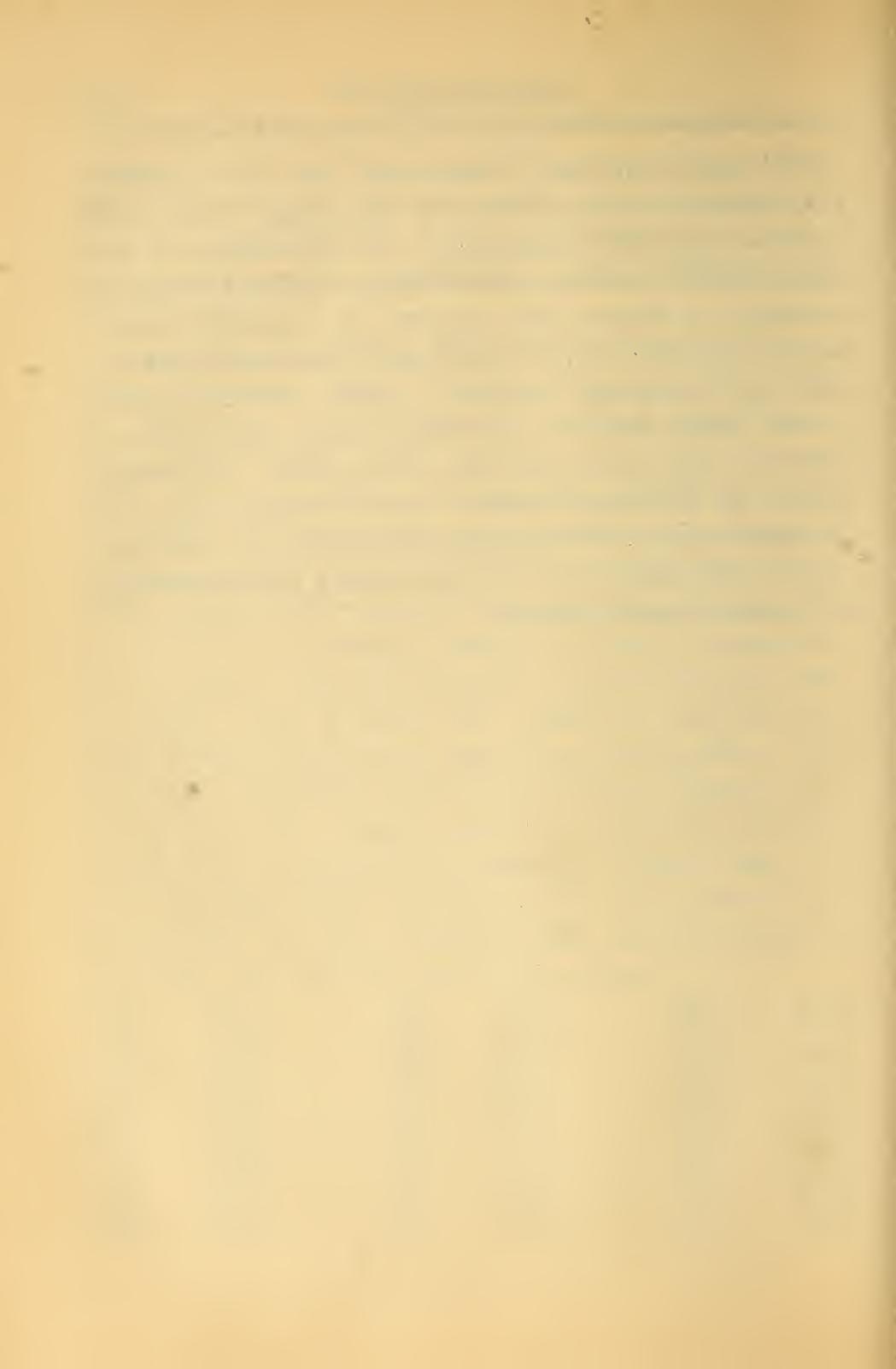
The policy usually followed as to annual reports is very unsatisfactory. A great many mills publish merely balance sheets, and do not show earnings at all. So long as the management is honest, efficient and conservative, this adds to the stability of the stock, because the

investor in times of depression does not know how small earnings really are; but the trouble is that income accounts are needed, as a means of disclosing to stock-holders whether the management is honest, efficient and conservative.

Variations in earnings may be roughly gauged by a close observance of the average prices of cotton cloth and of raw cotton. Both may be obtained from "Dun's Review"—a weekly trade publication which costs but little. The cotton goods prices in the table of wholesale quotations of commodities can readily be averaged, while on another page is found the prices of spot cotton. The margin of difference between the two, or at least the variations in the margins broadly reflects a corresponding variation in the gross margin of profit made by cotton mills. But of course the volume of business and other factors must also be taken into consideration. The following tabulation shows the margin of difference between the cost of eight pounds of middling uplands cotton and a corresponding quantity of print cloth. In 1910, for illustration, the price of the cloth exceeded the cost of the cotton by a margin which was equivalent to 59.24 per cent. of the cost of the cotton.

1881	108.52	1891	96.90	1901	70.38
1882	99.73	1892	118.10	1902	80.75
1883	85.79	1893	92.69	1903	66.46
1884	87.89	1894	102.47	1904.	66.18
1885	85.93	1895	96.74	1905	70.66
1886	97.57	1896	74.21	1906	74.44
1887	92.58	1897	77.61	1907	106.48
1888	113.09	1898	64.90	1908	82.69
1889	108.14	1899	70.84	1909	64.90
1890	85.92	1900	81.00	1910	59.24

Mill stocks are good investments, but it is essential to possess an intimate personal knowledge of the mill business and mill management. In the absence of detailed income accounts and of balance sheets sufficiently complete to disclose the amount of working capital, there is no other way in which an investor can obtain a sufficient knowledge to form a really correct opinion of mill stock values. For these reasons the ordinary investor, who does not have this special knowledge, should let mill stocks alone. In this respect they are like bank stocks, for both offer large profits on the principal to the careful investor who has a full knowledge of personnel and finances.



XXVII

Railroad Common Stocks

STOCKS are not obligations, and while this fact is of the most primary sort, it is so generally overlooked or ignored as to require special emphasis. Investors are continually inquiring if this or that railroad stock is a safe "investment." Webster's definition of the word "investment" is "the laying out of money in the purchase of some property, usually of a permanent nature." Now there is nothing permanent about any railroad stock, unless it be of a company which has outstanding no bonds or notes and no floating debt; and there are no such companies in the United States. Boards of directors are absolutely at liberty at any time to reduce or discontinue the payments of dividends upon either preferred or common stocks, and it does not throw the road into receivers' hands as would be done by a default of interest on bonds or notes.

Neither are dividends always rendered practically secure by the desire of stockholders to receive returns. In theory railroads are in the hands of their stockholders, but in practice this is often untrue. The Erie for a considerable period of years was in the hands of its competitors, and its stock was owned or at least controlled, not for the benefit of the stockholders, but rather chiefly for the purpose of preventing the Erie Railroad

from aggressively competing for valuable traffic. Sometimes, too, stock control rests in the hands of bankers or financing houses who are more interested in underwriting commissions and profits than in dividend returns.

At other times, as in the case of the New Haven prior to 1913, stockholders are brought under the spell of some forceful individual, usually a president or a chairman, who may manage the property absolutely contrary to the interests of these very stockholders. To enumerate all the blunders made by boards of directors (who are elected by stockholders) during the past ten years would fill this book from cover to cover. There is, therefore, not the slightest reason why the public should regard a railroad common stock, however good, as an investment of permanent and stable value. This value is subject to constant change, even in the cases of the very best of these stocks.

At some time within the past decade probably not less than one-third of all the railroads in the United States, as measured by mileage, have been mismanaged. Therefore, the investor should have the same mental attitude toward a railroad stock as towards a real estate title. He should believe in it only after it has been examined. The first step in the examination is to determine whether the "operating expenses" of the road are really paid out of current earnings, or whether some of them are being allowed to accumulate to the detriment of the property. This may be done by closely observing both the ex-

penses per mile over a series of years, and the percentage of individual expenses to gross earnings.

It ordinarily requires for "maintenance of way, equipment and structures" about 25 or 30 per cent. of gross earnings; and about 60 per cent. of this maintenance expenditure itself goes for wages. If gross earnings are running steady, and a road suddenly decreases its total maintenance expenditures from 30 per cent. of gross to 28 per cent., this may be regarded as indicating that maintenance is being neglected. Nor are the means lacking for checking up this indication.

Firstly, the stockholder upon application can obtain from the given road the last two or three annual reports free of charge, and can compare the itemized maintenance expenses. If, upon such a comparison, he finds that there has been a sharp decrease in expenditures for ballast, ties, rails, track materials, and for repairs to cars or locomotives, he can be pretty sure that the neglect of maintenance is a fact. Secondly, he can compare the per mile total outlays for maintenance of the given road with those of other neighboring roads; and if it is found that the other roads have not been able to reduce their maintenance expenditures, this is a further indication that the reduction on the part of this road represents neglect.

Sharp distinction should be made, however, between maintenance expenses and transportation costs; for transportation costs cover such items as wages and fuel, and consist entirely of expenses which do not in any

way improve the property or confer future benefits upon the road. If a company spends very heavily for transportation, except in the case of advance purchases of fuel and supplies, it is a dead loss. But if it spends very heavily for maintenance the heavy expenditure should be the equivalent of a reinvestment of surplus earnings in permanent improvements to the property. Heavy maintenance expenditures, then, may indicate future prosperity for the property, whereas heavy transportation costs usually indicate inefficiency of management.

Both of these classes of expenses are dominated by the same business factors or influences. The influences which ought properly to reduce operating expenses per ton, or per passenger, or the percentage of these expenses to gross earnings, are the following:

- a. A sharp increase in gross earnings
- b. A gain in the density of traffic
- c. A larger average train load
- d. A larger average car load
- e. A longer average freight haul
- f. A higher proportion of low grade freight
- g. A smaller percentage of empty freight cars
- h. A smaller percentage of passenger to total earnings
- i. Higher freight or passenger rates

By low grade freight is of course meant heavy products, such as mining and forest products, which can be handled easily and at a low cost per ton. A small percentage of empty freight cars means the small proportion of empty cars in the typical train, and many roads state in their annual reports the number of loaded and empty cars in the typical freight train for each year.

If maintenance expenses have decreased and the decrease is not accounted for by one or several of these factors, it is a pretty sure indication of neglect. Furthermore, if maintenance costs fall while transportation costs do not, this in itself is an indication of neglect, since both are generally dominated by the same factors. If the investor thus reaches the conclusion that there is neglect, he can readily look back to years prior to the neglect, find the proper percentage of maintenance expenses to gross earnings, and thereby learn how much to deduct from the surplus earnings now shown by the books in order to obtain the genuine surplus available for dividends. We shall find that it is necessary to make this correction for the purpose of using the true earning power of common stocks as a basis for estimating their values.

Having found this true earning power one is prepared to estimate the asset value of common stocks; and while judgment and discrimination are always necessary, a good general method is the following:

(1) Add together these items:

- (a) Bonds issued prior to 1907 at par values
- (b) Bonds and notes since issued at their average market values
- (c) Preferred stocks at their average market value, if they are investments, and at their capitalized earnings if they are speculations.
- (d) Common stocks at their capitalized earnings

(2) Deduct from the sum of these four items:

- (a) Bonds and notes at par
- (b) Preferred stock at valuation equal to 19 times its dividend
- (c) Net current liabilities if any

Explanation of this method is as important as a mere statement of it. The sum of the four items named under (1) is regarded as the estimated total assets, tangible and intangible; and the next step is to deduct the liabilities, legal or moral, which rank ahead of the common stock—these being named under (2). The remainder is the estimated intrinsic value of the common stock issue, and the value per share may be obtained by suffixing two ciphers to this estimate and dividing by the par value of the common stock outstanding.

Bonds issued prior to 1907 are counted among the assets at par, partly because prior to that time good bonds were floated very close to par, and partly because since that date most of the standard railroads have put back into their properties a sufficient surplus after dividends to make up the difference between the issue price of these old bonds and par. Bonds and notes issued since 1907 are counted at their market value, since their issue and flotation prices have been relatively low, and since their market prices may be regarded as the approximate equivalent of the money actually received by the railroads through their issue and sale. These market prices are generally below the flotation prices, and likewise the roads receive from the issue and sale considerably less than the flotation price, because of the banker's commissions and other expenses paid.

Preferred stocks of an investment type may represent either tangible assets or else assets which are in-

tangible, but which nevertheless are rather stable and permanent. Hence such stocks are counted at their average market value upon the theory that the assets behind them are roughly equivalent to this average. But preferred stocks of the speculative class are considered to represent merely the present worth or discounted value of the prospects of the company; and they are therefore counted merely at their capitalized earnings—which means in practice at about $13\frac{1}{4}$ times their yearly surplus earnings per share. This ratio is based upon the fact that as an average the market value of standard railroad stocks is equivalent to $13\frac{1}{4}$ times the yearly surplus earnings per share.

In discriminating between preferred stocks of the investment and of the speculative types, one may usually be guided by the yield on the market price; for those yielding less than 6 per cent. are generally good investments, while those yielding more than this amount are more likely to be of a speculative nature. Common stocks are counted at their capitalized earnings, which also means using the above ratio of $13\frac{1}{4}$; and in this calculation one should use the true earning power of these stocks determined as described in the foregoing pages.

Having thus obtained an estimate of the total assets, tangible and intangible, in making the deductions, both bonds and notes, are all counted at par, even though they were not so counted in the assets. This is because the companies must pay them off at par value even

though they did not receive par for them. In these deductions the preferred stocks are counted at 19 times their dividend rates, because they usually sell at prices equivalent to this arithmetical product. If, however, they do not pay dividends, about the best practical method is to count them here at their average market values. Furthermore, "net current liabilities" also rank ahead of common stocks, and must be deducted. By this phrase is meant the excess of current liabilities over current assets. Strong roads do not show such net liabilities, but a great many weak roads do; and in calculating the amount of them, the investor will find a definition of terms in Chapter 45. A discussion of the proper uses of railroad and other common stocks will be found in Chapter 44.

XXVIII

Industrial Common Stocks

INDUSTRIAL companies are comparatively new. Probably more than nine-tenths of industrial stocks have been issued since 1890. Partly for this reason, and partly because of the great diversification of industrial business, there has been no standardization of accounts. Practically every company has its own form for constructing its annual reports, and the form of each company differs from that of every other company. Hence it is not without difficulty that industrial common stocks can be analyzed.

Earning power is of course the most important question, and the real earning power of an industrial stock is hard to calculate, because these companies do not report any details regarding their operating expenses. Either they give them en masse, or else they do not give them at all. With a railroad it is easy to learn whether the reported amount of net earnings is genuine, or whether it represents mere bookkeeping fictions or technicalties; for the railroad makes such detailed reports that it is a simple matter to learn whether operating expenses have been fully paid or not. Therefore, the investor must apply general statistics to the individual industrial company as a test of the genuineness of its earnings statement.

By this it is meant that a soft coal road, for example, which claims to make 50 cents per ton net profit should be regarded with suspicion; for the general average profit of soft coal companies is known to be 10 to 30 cents, and a profit of 50 cents would be so extraordinary as to be very improbable. Or to take a different illustration—should a steel company, in a given year, when steel prices went up and consumption increased, report a decrease in net earnings, the report should be regarded as being probably a mere technicality, rather than a statement of real conditions.

Such methods as these have to be used in estimating earning power, because of the absence of the data which one ought to have. Some of the important points which would be needed to make a really accurate and scientific estimate of earning power are: First, total gross earnings; and second, expenses subdivided according to wages, materials purchased, ordinary repairs, improvement outlays, depreciation charges and bad accounts. Hardly any companies give these details, and indeed it is doubtful if there is a single company in the United States which gives them, and manifestly a scientific analysis is impossible. All that one can do is to use such reports as the company offers, and all the available general statistics, and arrive at a rough estimate of the yearly earnings available for dividends on the given stock.

Taking this estimate of earnings as a basis, it is a good plan to form an estimate of the asset value or intrinsic worth of the stock—remembering all the time

that the assets behind industrial stocks are usually intangible. A good general method is to start with a valuation of the company based upon past selling prices of the outstanding securities, and to add thereto the assets which have since been accumulated out of earnings.

One should go back five or ten years and select a period of two or three years when the earnings and the financial condition of the company were apparently normal, and when the condition of the industry in which the company is engaged was also normal. Having made this selection the average prices of all the securities of the company should be obtained, basing this average upon the monthly highests and lowests throughout the selected period. The value of these securities during such a normal period should be treated as if it were the equivalent of the true value, or asset value, of the company at that time, or at the middle or central year of the given period. Adding to this hypothetical true value the assets accumulated out of earnings since that central year, plus the actual amount of new capital raised and invested in the properties, one obtains the present valuation of the company. Deducting from this valuation the bonds, short term notes, preferred stocks and net current liabilities, if any, one obtains the value remaining for the common stock at the present time.

Admittedly this method consists, in a sense, of reasoning in a circle, but this is a merit rather than a defect. Average market values for, say a three year

period, are so much more accurate and reliable than appraised values made by engineers and accountants, that they form a very good starting point. Besides this, industrial common stocks are pretty certain to sell around the prices or valuations arrived at in this way, whereas their selling prices have not the slightest relation in the world to appraised values.

For the sake of illustration this method of estimating is here applied to United States Steel common stock as of December 31, 1910:

Original Assets—being based on the average market value of the stocks and bonds of all the constituent companies, 1899 to 1901.....	\$ 791,815,000
Accumulated Surplus December 31, 1910, minus the \$25,000,000 supplied at time or organization	139,143,158
Total Expenses for new property and new construction	362,452,383
Paid into sinking funds to December 31, 1910....	55,676,941

Estimated total value of U. S. Steel Corporation's assets as of Dec. 31, 1910.....	\$ 1,349,087,482
Deductions to find value remaining for common stock (preferred stock \$360,281,100; bonds \$596,351,867)	956,632,967
Estimated assets remaining for common stock..	\$ 392,454,515

Same per share

\$77.21

Notwithstanding the usefulness of such methods, it must be admitted that industrial common stocks cannot be successfully handled as though they were securities of definite and constant intrinsic value. Indeed they are nothing of the kind. Their value is not only intangible but also psychological. Very often this value

represents nothing more than a consensus of opinion of the future prospects of a given business. It is the exception rather than the rule when such a stock is fully covered by even intangible assets, for the rule is that it represents mostly capitalized earning power or capitalized expectations of future earning power. Hence it is that the successful method of investing in these stocks is to buy them, not to hold for their income, but to hold for a short period in order to obtain a profit on the principal through a rise in price. In brief, these stocks are generally speculations and not investments.

Now, buying for a profit on the principal means in general, catching a part of the broad swings of the market, and these are largely identical with the broad swings of business prosperity. If one were to make a composite average of statistics reflecting business prosperity—namely, bank exchanges, railroad earnings, steel production, foreign commerce, building operations, and the like—and were to draw charts of this composite average, and of the course of the stock market, it would be a little difficult to tell which was which. As a broad and consistent policy, then, the proper method of investing in industrial common stocks is to buy them just when a business depression has about run its course, and sell them when the next succeeding boom in general business is at its climax; and then to let them alone until the next succeeding business depression is nearing its end.

Even so comprehensive and literally truthful a gen-

eralization as this is not alone sufficient; for one needs to know also the governing principles which determine the prosperity of individual companies, and thereby determine first, the earning power, and second the dividend payments of their stocks. For some of the more important companies, these governing principles, or the statistics best reflecting them, may be tabulated as follows:

Company	Governing Principle
Automobile Companies.....	Total car output; India Rubber imports; automobile exports.
Agricultural Implement Cos...Farm	crops and prices.
Copper Companies	Copper exports; copper metal prices; building operations; railroad gross earnings.
Electrical Manufacturing Cos..	New security issues; pig iron output; steel prices.
Equipment Manufacturing Cos.	Orders for cars and locomotives; railroad net earnings.
Fertilizer Companies	Value and prices of leading farm crops.
Leather Companies	Prices of hides and leather.
Oil Refining Companies.....	Illuminating oil exports; oil and gasoline prices.
Petroleum Producing Cos....	Crude petroleum prices.
Smelting Companies	Prices of copper, silver, lead and spelter.
Sugar Companies	Prices of raw and refined sugar.
Steel Companies	Prices of steel; pig iron output.
Soft Coal Companies.....	Pig iron output; imports of crude materials; freight earnings of soft coal roads.
Woolen Companies	Prices of wool and woolen cloth.

In each instance this tabular exhibit shows, under the heading of "governing principle," the most useful available statistics in judging the fluctuations of earn-

ings. By way of further explanation some comments are useful.

With sugar refining companies the margin between raw and refined sugar is the measure of prosperity; and with sugar producing companies the price of raw sugar is the most important. All the prices referred to in this Chapter can be obtained from such sources as Dun's Review, Bradstreet's Review, the Journal of Commerce, the Engineering and Mining Journal, the Monthly Summaries of Commerce and Finance and the publications of the Department of Commerce and Labor at Washington.

With leather companies the margin between hides and leather is the measure of prosperity; while with woolen companies it is the margin between raw wool and woolen cloth. For smelting companies the above mentioned metal prices are a good guide, not only because smelting charges vary somewhat with metal prices, but also because metal consumption goes up and down parallel with prices; and the big smelting companies are considerable producers of metal on their own account.

Pig iron production is significant in the case of steel companies, because the consumption of steel is largely proportionate to the production of pig iron most of the time. In the case of fertilizer companies, the importance of the total value of crops of the United States as compared with the value of the same crops in previous years, lies in the fact that fertilizer sales rise and

fall with the prosperity of the farmer, whereas his prosperity depends upon the salable value of the crops.

The statistics mentioned in connection with soft coal companies have nothing directly to do with these companies, but they form a good guide because soft coal consumption is largely proportionate to the variations in these statistics. Furthermore, the data as to soft coal production and consumption are usually rather stale before they become public. New security issues are significant in regard to electrical manufacturing companies, partly because electrical machinery is so frequently bought with the proceeds of new security issues. Moreover, the demand for such machinery is greatest when the construction of improvements and extensions is the most general, and this is the very time when new security issues are the largest.

The ordinary method of study with any of these companies should be to tabulate in parallel columns the known earnings of the company and the general statistics above referred to. The relation of the movement of earnings to the general movement of trade can then be discovered, and the future of the earnings of the given company can be gauged. In this way one may obtain a fairly accurate idea as to the proper time to buy and to sell out.

XXIX

Copper Stocks

COPPER stocks are so different from other securities in every essential respect that methods of analysis which would be accurate in other fields, would lead to absurd conclusions in this. To begin with there is no other class of stocks so largely dependent upon commodity price movements as are these upon the price of the copper metal. Hence, the very first essential is to acquire a fairly good understanding of the influences or economic forces which govern the metal. To accomplish this, it is only necessary to observe candidly a few very important facts as to the mining and consumption of copper; but it must be admitted that this open-mindedness has seldom been displayed, and that in consequence prevailing beliefs as to the future of metal prices have been too often wrong.

Perhaps the most important of these few facts is that copper consumption is never very large except toward the close of a general boom in business. The metal is consumed largely in the manufacture of new machinery and equipment, in the erection of lighting and power plants, and in the construction of mills, factories, street railway lines and telephone and telegraph lines. All this construction work represents improvements and extensions, and is not strictly essential to the

daily needs of the average citizen. Moreover, it is done chiefly in boom times, instead of being distributed in an even manner over a series of years.

In consequence, the consumption of copper for a number of years after the end of a business depression depends chiefly upon maintenance and repair work, and a moderate amount of new construction work. Toward the end of a boom in business, however, when the consumption of all commodities is enormous, and the demand everywhere exceeds the available supply, there is a general rage to increase the plant capacity of almost every business; and then is the time that the consumption of copper becomes very great, and prices soar to giddy heights.

This very over-consumption of general commodities, which leads to the demand for more plant capacity, and to the over-consumption of copper, also leads to a business depression, as it did in 1907. Hence, copper prices slump after a few months of excessive demand even more rapidly than they rose; but in the meantime the high prices, having lasted for a year or two, resulting in enormous mining profits, invariably have the effect of enticing a very large amount of new capital into the copper mining business. Thus it occurs that after the metal has slumped because of the collapse of the boom in general business, it is held down by the over-production of copper, resulting from this large influx of new capital. Hence it was that in 1908 and 1909 copper scarcely rose at all, even though other com-

modity prices made almost a complete recovery. Moreover, this has been the experience of previous business depressions.

The investor, therefore, must keep in mind the facts that for these strong natural reasons, the copper metal does not rise very rapidly until the boom in business is nearing its end. It then stays at the high prices only a year or two at most, whereupon it slumps and remains at the low prices three to five years. In the sixties the low price level lasted from April, 1866 to May, 1871; in the seventies from November, 1873 to October, 1877; in the eighties from December, 1884 to May, 1887; and in the nineties from December, 1891 to July, 1898. Hence, after a financial panic, and a long-continued depression—the metal having remained at low prices four or five years—the buyer of copper stocks should expect a rise in the metal, and should hold whatever stocks he purchases, regardless of metal fluctuations, until the rise occurs. Still more important is the fact that he should not expect this rise until the metal market and general trade have passed through the experience just described.

Only one more word need be said about metal prices; and that is that the prevailing theory that copper should move parallel to iron is supported by neither history nor common sense. There is probably not a single line of business in the world wherein iron and copper consumption rise and fall in like proportion; and even if there were, the production of the two metals is so en-

tirely independent that there is no reason at all why their prices should move together. In 1890 for example, we produced 102.5 tons of iron to one of copper; in 1893 the ratio was only 78.6 to one; in 1899 it was up to 85.7; and in 1908 it was down to 63.5. Likewise, the price ratio of a pound of copper to that of a ton of iron—meaning the ratio of the number of cents to the number of dollars—rose from 72.8 in 1891 to 103.3 in 1898; then fell to 83.4 in 1900; rose to 105.3 in 1901; fell to 54.8 in 1902; and rose to 94.3 in 1906. Such theories indeed have so little sense that it is needless to discuss them in detail.

Having taken into account the probable effect of the future of the metal market upon copper stock values, the investor should consider another important peculiarity of copper stocks. This is that notwithstanding their speculative character, they often sell as high and yield as little, at least as a rule, as good bonds, such as municipals and first mortgage railroads. For the twenty years ended with 1909 the average annual earnings available for dividends of all the leading copper companies in the United States was only about 2.75 per cent., and for the fifteen years ended with 1909 only about 3.25 per cent. on the market value of the stocks. Enough capital is always attracted into the business by its speculative possibilities to keep production so large, and prices so moderate, that the capital invested is able to earn only a very low return. On this account the buyer of copper stocks may confidently expect to see the latter sell as high in com-

parison with their dividend payments as the best securities.

Another principle is equally important to bear in mind, namely, that whereas other securities should be sold for fear of a slump when their prices become very high, and their yields correspondingly low, this is only partly true of coppers. They, on the other hand, should be held until both prices and yields become exceptionally high at the same time; for copper dividends fluctuate rapidly, and are apt to be the largest when the metal is the highest, since at that time earnings are so enormous. It is for this reason that copper stocks show almost their highest yields when their prices are at the top, although other stocks at such times show their lowest yields. The investor, therefore, if general business is booming, and prosperity is so great that manufacturers in general cannot keep up with their orders, and the railroads cannot move the vast tonnage of freight laid at their terminals, should sell his copper stocks just when they are showing their highest yields, and appear the most attractive.

Although these principles relate primarily to the movements of copper stock prices, rather than to the analysis of their values, it is proper that they should be discussed for the reason that these stocks are essentially speculative, are not, and cannot be "investments" in any true sense of the word, and therefore are not subject to scientific analysis. Their values are not intrinsic, but rather speculative; and owing to the sudden

exhaustion of good ore which occasionally occurs, or to the sudden change in the character of the ore, there is no real permanent security behind these values. Analysis must, therefore, be made from the stock market point of view.

Perhaps the method most frequently used in estimating intrinsic values—as if the value of a copper stock were “intrinsic”—is to find the approximate tonnage of ore in the given property, also the copper contents per ton, and the net profit per pound of copper, and calculate therefrom the aggregate net profit to be obtained by extracting and selling all the copper. This aggregate profit is then divided by the number of shares outstanding, and it is assumed that the quotient represents the intrinsic value per share.

Nothing, however, could be more utterly absurd. Ore reserves serve merely to insure future earning power. They do not represent present value, but rather future value; and to base an estimate of intrinsic value upon them is worse than counting chickens before they are hatched—it is counting them before the eggs are laid. For example, the Reading Company indirectly owns coal reserves of about 2,143,706,500 tons, which by this method of computation would give Reading Company common stock a value of about \$1,621,150,525, or \$2,316 per hundred dollar share.

About all that can be done by way of “analyzing” copper values is to make reasonably sure that the management is honest, that the company has ore re-

serves enough to last for a few years, and that its cost of production is low enough to enable it to pay dividends with the copper metal at its average or normal price—which is about 14½ cents. If, however, it is desired to estimate the earning power of a copper stock, probably the best method is to multiply the approximate producing capacity by the net profit per pound of copper, and divide the total yearly profit thus obtained by the number of shares outstanding. Thus may be obtained the approximate yearly earning power per share, and by dividing this in turn by the market price of the shares, one may find about what percentage the stock is earning on its market price, and whether it is cheap or dear, as compared with other stocks similarly situated.

These stocks, at the same moment, sell at such a variety of prices that earnings of different stocks on their market values vary all the way from 3 to 16 per cent.; and on this account, the purchaser should learn the percentages earned by the given stock on its market price for a series of years. Moreover, as these estimates of earnings are based always upon the difference between the cost of production and the prevailing price of the metal, such a comparison will tend to show whether or not the stock is really cheap upon the basis of current metal prices. While the values of these stocks are speculative rather than intrinsic, and notwithstanding that accurate analysis is impossible, there is no class of securities which appreciate more during a

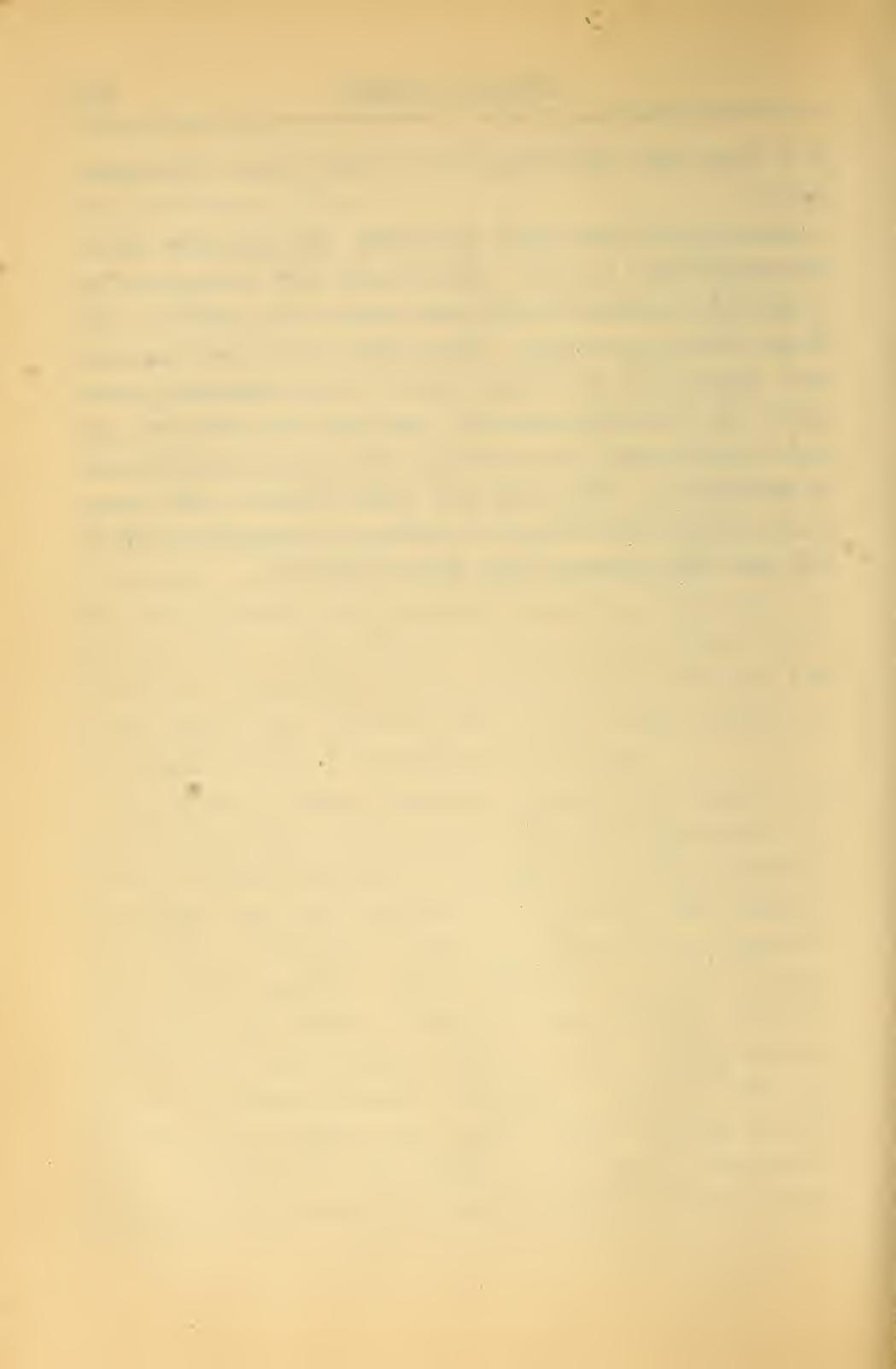
bull market, and none in which the wise purchaser can make so large profits.

In obtaining the necessary statistics of production, costs and the like, more than ordinary care should be taken. The most important figures are those in regard to costs per pound, and copper company reports are so lacking in details as to throw but little light upon this question. Furthermore, it is a rather general and good practice to take out the best ore, and therefore operate at the lowest costs when copper metal prices are low; and to mine the poorer ores, in spite of the high cost of production, when copper metal prices are high. Hence, one should avoid the generally prevailing error of supposing, after a big rise in metal prices, that copper companies are going right on producing at the same low costs which they showed when metal prices were low. In practice they do nothing of the kind.

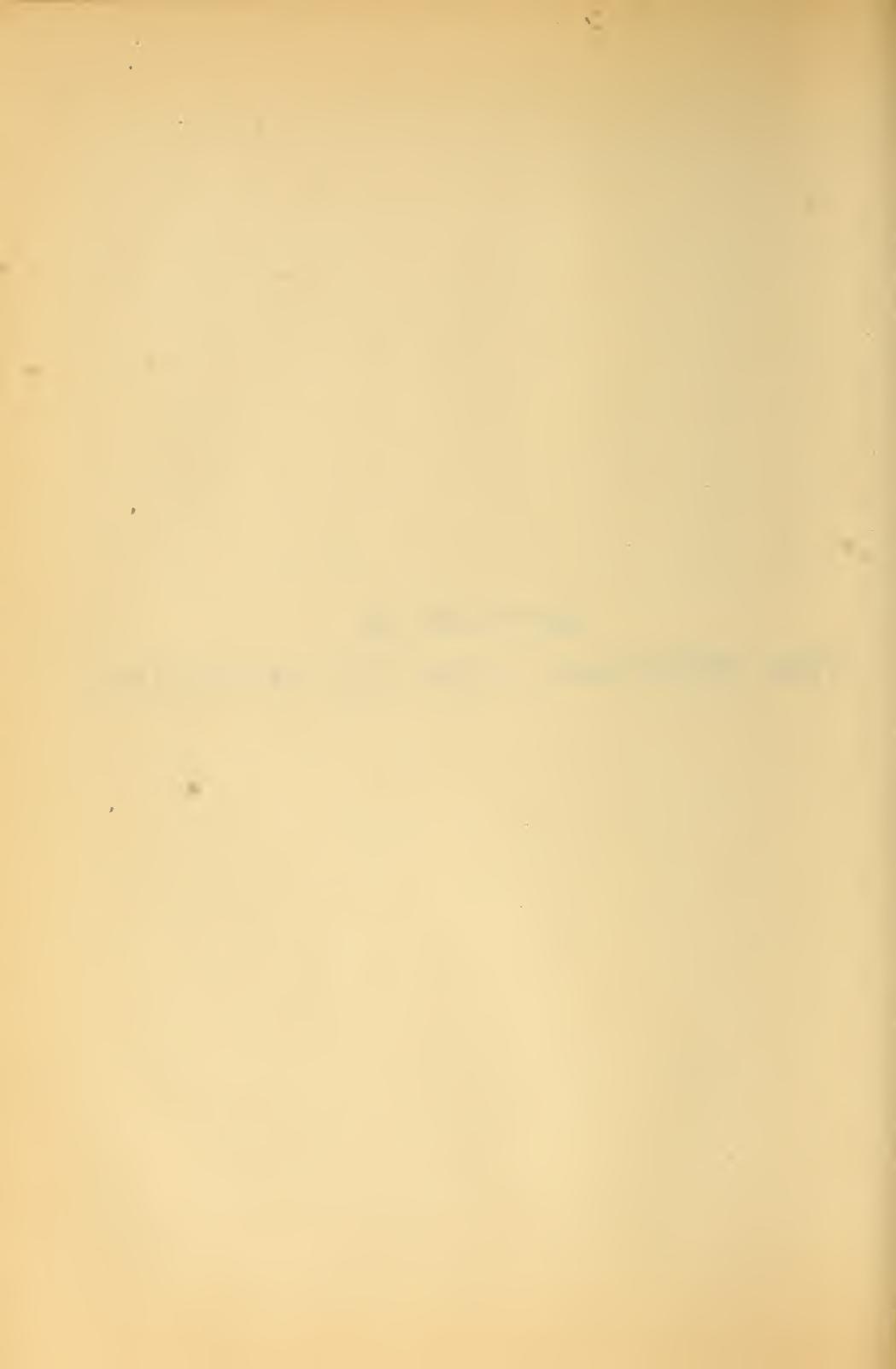
In obtaining these statistics, especially of costs, it is to be continually remembered that the figures are almost as much matters of opinion as actual statistics. Therefore, the best method is to read all the standard authorities, and take a sort of a consensus of opinion. One should consult such authorities as the Copper Handbook, the Boston News Bureau, Walker's Weekly Letters, and the market letters of the leading Boston Stock Exchange houses, especially those of the big houses which finance and control copper mining properties. A consensus of opinion as to costs, obtained in this way, will prove to be near enough the truth to serve

as a basis for estimating the earning power of copper stocks.

As to production and producing capacity, the same methods should be used. In the case of a new property it should be remembered that engineers' opinions are almost always too high. The conservative investor may well deduct 20 to 25 per cent. from engineers' estimates of producing capacity, and add one cent to one and a half cents per pound to their estimates of costs of production. Not only will this arbitrary rule come closer to the truth than the estimates themselves, but it will save the investor very many blunders.



SECTION III
THE PERSONAL SIDE OF INVESTING



Personal Side of Investing

or

Preface to Section III

In Section II we have noticed one by one the various classes of securities, and the earmarks which are valuable in helping the investor to select the better issues out of each class. The personal side of the science of investing has not, however, been given the attention which it deserves in current financial literature. That it should have been so neglected seems to be an oversight; for the capacity of the individual to make scientific discriminations is just as important in the investment field as it is in law, medicine or any of the arts.

A man out of his place is no man at all. We have no record of the statues carved by Alexander the Great, or of the battles won by Phidias; and yet right around us every day people are making attempts to practise some of the higher arts of investing for which they are as unfitted as was Phidias to command armies or Alexander to carve the Olympian Jupiter. The less extensive is one's acquaintance with securities, and their good and bad points, the more strictly he should adhere to the most rigid rules of selection.

An experienced railroad engineer of long training may run a defective locomotive without imperiling lives, because he is able to immediately detect and diagnose

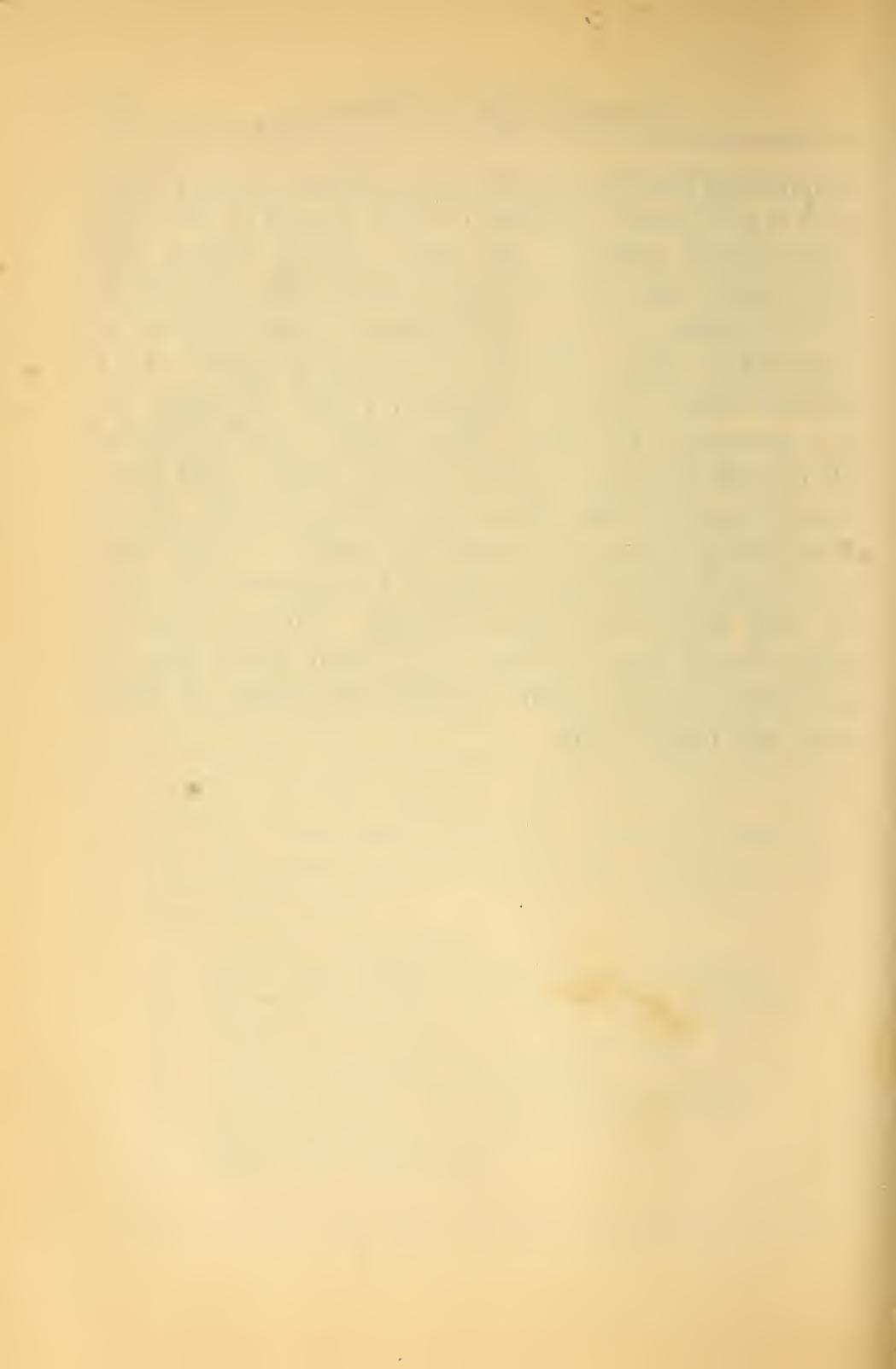
the first sign of danger and take the necessary precautions; but a new man needs a perfect locomotive. Likewise a stock or bond broker, for example, who is continually studying securities is competent to select good from amongst such speculative issues as unsecured bonds and common stocks; but the clerk or laboring man who attempts the same thing is pretty sure to lose a considerable portion of his investment.

For these reasons it is planned to here present a series of ten chapters devoted to the PERSONAL SIDE OF INVESTING. In these an effort will be made to point out what classes of securities each considerable class of investors may safely purchase; and an opinion will be given as to what proportion of the total investment may safely be put into securities showing the higher yields and the lesser degree of safety. The desideratum is of course to get the highest possible yield without sacrifice of principal; and the constant effort will be to outline the method of accomplishing this. Roughly speaking, the investing public may be arbitrarily subdivided into the following classes:

1. Stock and bond dealers
2. Banks, trust companies and insurance companies
3. Railroad, industrial and manufacturing companies
4. Trustees and estates
5. Colleges, hospitals and other institutions
6. Business proprietors and partners
7. Lawyers, doctors and other professional men
8. Salaried employees of business houses
9. Clerks and laboring men
10. Women and dependents

While no hard and fast lines can be drawn, it is ap-

parent that stock and bond brokers, whose regular business it is to study investment values, should be the most competent to judge of the same, whereas women and dependents, who, as a class, have neither the opportunity nor the ability to make such studies, could scarcely be expected to acquire skill at all in judging values. As a general thing, the least competent judges of values set for themselves the most difficult tasks, such as getting 50 or 100 per cent. return on their money; and then, when they fail, they draw the conclusion that money must not be invested in stocks and bonds. On the contrary, there is no better medium of investment even for the man with a few hundred dollars. He can obtain a larger return from securities with equal safety than he can from a savings bank, or from real estate, or from most any other source.



XXX

Investments for Stock and Bond Dealers

FOR the reasons just mentioned in the Preface to this Section, stock and bond brokers can afford to take risks which to most any other class of investors would almost certainly involve considerable losses. They can afford in the first place to use the most highly developed and scientific method of handling investments, namely, that of changing them from time to time in harmony with the changes in business conditions and security prices. The uninitiated, in order to be safe, must buy securities which are at all times good; but these brokers have the experience which should enable them to buy cheap and sell dear. In other words, they ought to be able to obtain not only the interest or dividend return, but also a profit on the principal through appreciation in price.

The foregoing no doubt represents the most highly developed method of handling investments; for both stock and bond prices rise and fall with the ebb and flow of prosperity. A business depression carries stock prices down 25 to 50 per cent., and bonds 5 to 15 per cent., while a boom has the opposite effect. No one can sell at the top or buy at the bottom; but those who are competent to judge can at least sell above average prices

and buy below them, or in other words, sell above intrinsic values and buy below.

The efforts should be in times of depression to so change one's investment list as to make it include a high percentage of those securities which appreciate the most. On the other hand, when business is booming and prices are inflated, the list should be so revised as to include a high percentage of those securities which in the succeeding panic or depression will depreciate the least. Practically expressed, this means increasing the proportion of common and preferred stocks, and debenture, convertible and other partly-secured bonds when prices are depressed, and increasing the proportion of equipment trusts, short term notes and bonds of short maturity when prices are inflated. When prices are below values, the following is suggested as a list suitable for a stock or bond broker to hold as personal investments:

- 5 per cent. in first class underlying railroad bonds yielding
 $4\frac{5}{8}$ to $5\frac{3}{8}\%$
- 5 per cent. in gas company bonds yielding $4\frac{7}{8}$ to $5\frac{7}{8}\%$
- 5 per cent. in street railway bonds yielding 5 to $6\frac{5}{8}\%$
- 15 per cent. in steel and iron company bonds yielding $5\frac{1}{4}$ to $6\frac{3}{4}\%$
- 10 per cent. in corporation notes yielding $5\frac{5}{8}$ to $6\frac{3}{4}\%$
- 10 per cent. in bank stocks yielding 4 to $4\frac{3}{4}\%$
- 15 per cent. in railroad convertibles, etc., yielding $4\frac{3}{8}$ to $5\frac{1}{2}\%$
- 5 per cent. in manufacturing company bonds yielding 6 to 7%
- 5 per cent. in copper mining bonds yielding 6 to $7\frac{1}{4}\%$
- 10 per cent. in preferred stocks yielding 6 to $7\frac{1}{4}\%$
- 10 per cent. in common railway and industrial stocks yielding
 $5\frac{1}{2}$ to 7%
- 5 per cent. in copper stocks yielding 6 to 8%

Such a subdivision of the total investment would mean, when summarized, that 15 per cent. would be in first class bonds; 25 per cent. in good bonds or notes; 10 per cent. in bank stocks; 20 per cent. in fairly good bonds; and 25 per cent. in stocks.

The possibilities of a list of this kind are great. They cannot be precisely defined, because no one can know the future sufficiently to form a close estimate of the appreciation in the convertible bonds and common and preferred stocks. Still it is estimated that a good list of securities of the foregoing composition, if obtained during a business depression and a bear movement, and sold a few years later during the next ensuing boom, would show a pretty secure current yield of $5\frac{1}{2}$ per cent. on its cost, and would also appreciate in market value enough to bring the total yield for the several years during which it was held up to about $8\frac{1}{4}$ per cent.

It is assumed of course that the constant purpose of the investor will be to buy when prices are below value and to sell when prices are above value; and that in carrying out this purpose no attempt will be made to catch the momentary fluctuations. Broadly speaking, every five year period contains two bull movements and one bear movement. In recent times the average duration of a bull movement has been about two years, as compared with one year for a bear movement. In the past fifty-five years there have been twenty-three main movements including both kinds, but this large number in excess of that indicated by the generalization just

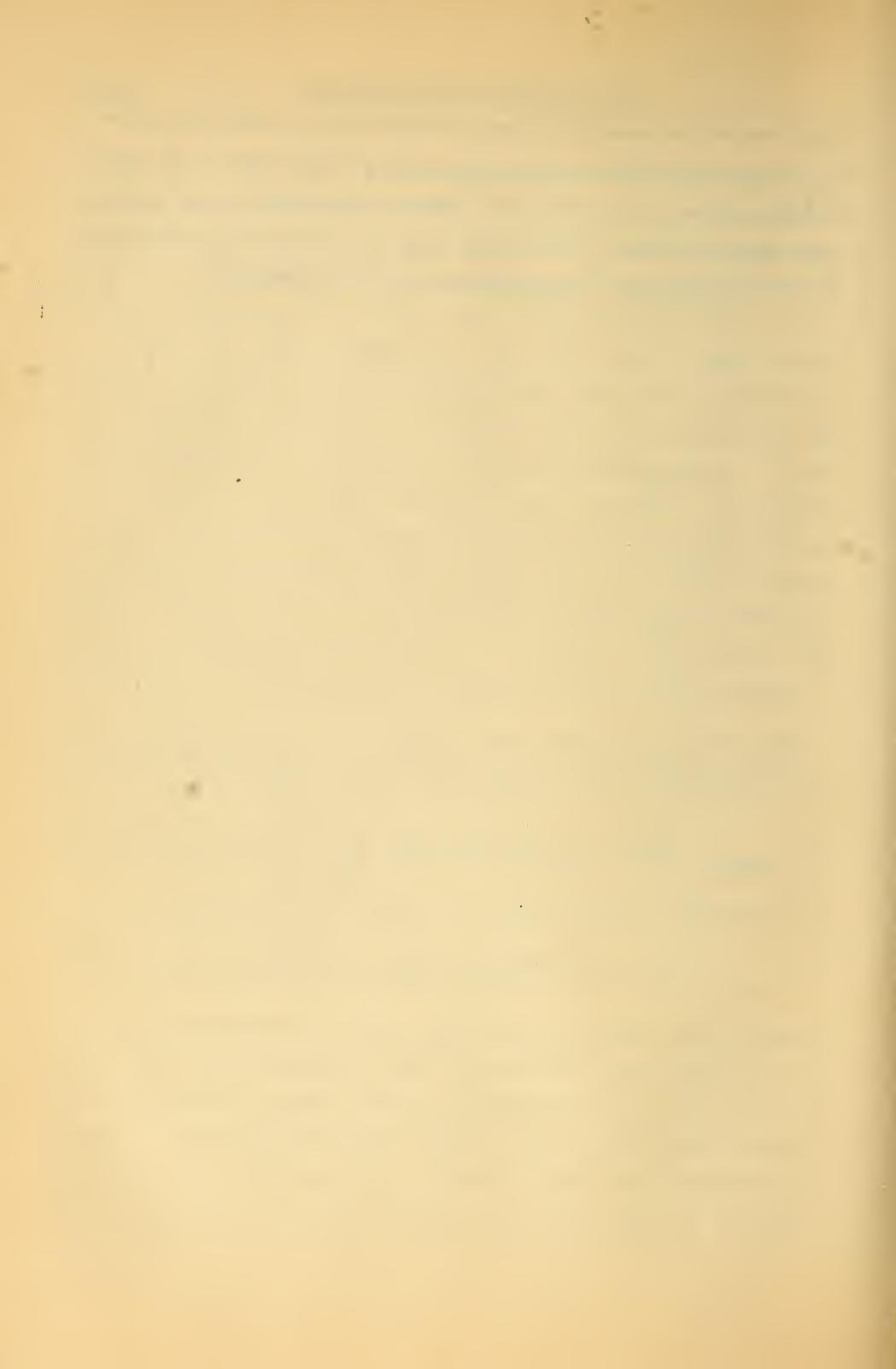
made is due to the frequency with which these movements succeeded each other in the period just after the Civil War. However, the point is that opportunities to make money through these broad swings come often enough so that they are worth waiting for.

When, in the judgment of the stock and bond dealer, a bull market is somewhere near the climax, it is manifestly desirable to dispose of such securities as depreciate greatly during a business depression. Thus the investor may place himself in a position to regard a bear movement as being ultimately nothing more than another opportunity to buy cheap. To do this he must hold nothing but those securities whose value remains almost unchanged in times of stress. Therefore the following diversification is suggested for such times.

10 per cent. in U. S. government bonds yielding $1\frac{3}{4}$ to 3%
10 per cent. in bonds of various states yielding $3\frac{3}{4}$ to $4\frac{3}{4}\%$
15 per cent. in good foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
15 per cent. in best municipals yielding 4 to $4\frac{3}{4}\%$
25 per cent. in underlying railroad mortgage bonds yielding $4\frac{1}{4}$ to $4\frac{3}{4}\%$
5 per cent. in gas and electric company bonds yielding $4\frac{3}{8}$ to $5\frac{3}{8}\%$
15 per cent. in equipment trusts yielding $4\frac{3}{8}$ to 5%
10 per cent. in short term notes yielding $4\frac{3}{4}$ to 6%

An investment of this kind would show an average yield of approximately $4\frac{1}{2}$ per cent., and will be so stable that its holder will be indifferent to a bear movement. From the extreme high prices of the bull movement to the extreme low prices of the bear movement, the depreciation is not likely, even in case of a panic

like that of 1907, to average more than $9\frac{1}{3}$ per cent. Furthermore, the safety of these securities is so great, and their recovery so rapid that even this depreciation is of no practical consequence to the investor.



XXXI

Investments for Banks, Trust Companies and Insurance Companies

THE second of the principal classes of investors consists of banks and insurance companies.

It is not the purpose here to discuss legal restrictions, because that would be quite out of place in a brief treatment of this kind. Every national or savings bank, trust company and insurance company has its legal department, or legal adviser, who passes upon all such matters. These restrictions make it impossible in many instances to hold just such an investment list as is here suggested; and besides this, it is often desirable to hold non-taxable securities, even though they yield somewhat less. However, the aim here is to present the method and the ideal; for it is an easy matter for any individual concern to vary from this method or ideal enough to suit special conditions.

Banks and insurance companies for many reasons cannot exercise the freedom which may be enjoyed by many other classes of investors. For their handling of their funds they must constantly hold themselves accountable, not only to the rights of the public and their stockholders, but also to the prejudices of both. They must not do anything which looks like speculating, and

at the same time they may with perfect propriety buy bonds of speculative types, and possessing large possibilities of profit. The public likes the word "bond"; and while in the case of a public investigation, or an unavoidable embarrassment, such an institution might be severely criticised for investing its assets in good stocks, there would be no such criticism on account of investing them in bonds of no greater stability.

Some of the profit-making securities, by which is meant securities showing definite promise of a material profit on the principal in addition to the interest return, are convertible railroad bonds, copper mining bonds, bank stocks, cotton mill stocks and standard preferred stocks. Many of these possess the dignity and reputation necessary to justify a banking concern or insurance company in owning them. And it is partly a question of dignity and reputation; for financial institutions of this kind are very well able to distinguish between good stocks and poor, and could doubtless make larger profits in stock investments than in bonds, and do it without material sacrifice of safety.

The Mutual Life Insurance Company, for example, formerly made large profits through dealing in stocks. It was reliably reported in 1910 that on 8,648 shares of Guaranty Trust Company stock it realized a net profit of \$4,290,479. At the market prices of the first of January, 1910, the company's holdings of bank and trust company stocks were likewise reported to be worth \$12,820,258 more than their cost. This is a large profit,

and it is still possible for many financial concerns, which are fairly free from restrictions, to make somewhat similar profits in bank stocks.

Another class of profit making securities which these institutions may hold with propriety consists of convertible railroad bonds. In these days a bank or trust company not having in its service an investment expert is behind the times; and for such an expert it should be an easy matter to distinguish between convertibles which are safe and promising, and those which are not.

Probably there are not more than three or four really first class railroad convertible bonds, but these when bought in a bear market show excellent profits. They often decline because of the psychological influence of their convertibility below the prices which they are worth on a purely investment basis. Then when stock prices rise they recover accordingly; and often if stocks do not go high enough to give any actual value to the convertible privilege, the percentage of appreciation in these bonds is much larger than in other bonds.

Still another class of profit-making securities appropriate even for conservative institutions is to be found in copper mining bonds. Here, however, more special knowledge is required than is the case with railroad convertibles. Besides this, the supply of copper mining bonds has always been small, and the supply of good ones is very small. Even this small supply may perhaps disappear unless replenished. Copper mining bonds do not generally stay on the market long. When

the issuing company becomes a big producer, and its stock correspondingly rises, its bonds first enjoy a big rise and then are either converted or retired. However, it is here assumed that there may be enough new bonds of this class issued from time to time so that the investor can profit in this way. Because of the great popularity which these bonds have had, they are not likely to be issued in the future on such favorable terms to the investor as in the past.

Cotton mill stocks are also dignified and profitable investments. They have never, for many years at least, entered the speculative arena, even though they contain speculative possibilities. Special knowledge is required to invest in them successfully, since their annual reports are as a rule very brief, and do not give sufficient information upon which to base an opinion. However, the man familiar with the cotton mill business, with many of the individual mills and with the personnel of their managements, should be able to obtain a 5 per cent. secure yield upon perfectly good stocks, and to get enough additional profit out of the occasional rises in the prices of these stocks to bring the total return up between 7 and 9 per cent.

Preferred railway and industrial shares may properly be held by banks and insurance companies which have the legal right to do so, if they are well selected and not bought in too large quantities. These yield between 5 and $6\frac{1}{2}$ per cent. and have the added advantage of being pretty safe purchases a year to a year and a half

after the beginning of a bear movement. For financial institutions which are free to choose, the following might be suggested as a reasonable diversification of an investment to be made during the latter part of a bear movement. Of course national banks issuing circulation are obliged to hold United States bonds; and there are many other special reasons, which there is not here space to discuss, why the financial institutions of almost every State must in practice deviate from this type of list.

5 per cent. in good municipals yielding $4\frac{1}{2}$ to $5\frac{1}{2}\%$
5 per cent. in railroad equipment trusts yielding 5 to 6%
5 per cent. in street railway bonds yielding 5 to $6\frac{1}{8}\%$
5 per cent. in steel and iron company bonds yielding $5\frac{1}{4}$ to $6\frac{3}{4}\%$
15 per cent. in short term notes yielding $5\frac{3}{8}$ to $6\frac{3}{4}\%$
10 per cent. in bank or trust company stock yielding 4 to $4\frac{3}{4}\%$
20 per cent. in railroad convertibles yielding $4\frac{3}{8}$ to $5\frac{1}{2}\%$
10 per cent. in manufacturing company bonds yielding 6 to 7%
5 per cent. in copper mining bonds yielding 6 to $7\frac{1}{4}\%$
10 per cent. in mill stocks yielding 5 to 6%
5 per cent. in railroad preferred stocks yielding $5\frac{1}{2}$ to $6\frac{3}{4}\%$
5 per cent. in industrial preferred stocks yielding $6\frac{1}{4}$ to $7\frac{1}{4}\%$

Of this entire list only the 10 per cent. invested in preferred railroad and industrial shares would be generally considered at all speculative. However, there is a promise of profit on the principal in the mill stocks, the copper mining bonds, the railroad convertibles and the bank stocks. Of the total list 55 per cent.—the issues just enumerated—show promise of profit on the principal; and yet the investment as a whole is surely not lacking in dignity and stability. Its average yield

would be 5.2 per cent. to 5.5; and it is a reasonable expectation that by selling the above 55 per cent. of the list during the next ensuing bull movement, sometime within two or three years, the total income might be brought up to about 7 or 7.5 per cent.

It is of course contemplated that banks and insurance companies will shift their investments somewhat as business and financial conditions change. The principle should be to carry a large proportion of profit-making securities when prices are below average, and to change these when prices are inflated into the most stable securities such as governments, underlying railroad and street railway bonds, municipals, gas and water bonds, etc.

Several methods of determining approximately when to buy in the expectation of a bull movement, and when to sell to guard against a bear movement, are explained in Chapter 42. A good selection for banking and insurance companies to hold through a bear movement is the following:

10 per cent. in U. S. government bonds yielding $1\frac{3}{4}$ to 3%
10 per cent. in bonds of various states yielding $4\frac{3}{8}$ to $5\frac{1}{2}\%$
20 per cent. in good foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
20 per cent. in best municipals yielding 4 to $4\frac{3}{4}\%$
25 per cent. in underlying railroad mortgage bonds yielding $4\frac{1}{8}$ to $4\frac{3}{4}\%$
15 per cent. in railroad convertible bonds yielding $4\frac{3}{8}$ to 5%

XXXII

Investments For Railroad, Industrial and Manufacturing Companies

RAILROAD, industrial and manufacturing companies are very large investors in stocks and bonds, and their holdings are steadily increasing. The railroads themselves own about \$5,000,000,000 out of their own capitalization of \$20,000,000,000; and there is a similar relation among industrial companies. Up to date these corporation investments have been made chiefly by parent companies in the stocks and bonds of their subsidiaries. Probably about nine-tenths of the railroad holdings of railroad securities are of this kind. The same may be said of a majority of industrial concerns. The Steel Corporation, for example, is nothing but a holding company, which owns almost the entire capital stocks of its numerous and great subsidiary concerns.

However, nearly every prosperous railroad has its purely investment account made up of securities held for their return; and it seems more than probable that as time goes on, and business conditions become more fixed, these investment accounts will grow. Financial management, as a science, is in its infancy in this

country, and even within the past few years it has made distinct progress. The great success made by Mr. Harriman with the investment account of the Union Pacific Railroad gave a marked stimulus to the policy of carrying large investments; and since then the income of railroads from their investments has increased much more rapidly than before.

From another point of view also it seems probable that there will be growth in the practice on the part of railroad and industrial companies of buying and holding good securities for their yield. That is to say, as corporations grow older there is a noticeable tendency the world over for them to become more conservative, and to try to fortify their position so that the accidents and misfortunes of time cannot dislodge them. This tendency should lead them more and more to maintain real reserve accounts.

Until now the word "surplus," as used in our corporation accounting, has meant not a liquid surplus reserve, but rather a surplus of the earnings of a given year over the necessary expenses and dividends of that year. It has not meant a surplus or reserve fund at all. When we read the words "accumulated surplus" in the balance sheets of one of our corporations, we naturally get the impression that it represents an accumulation of unexpended earnings which can be drawn upon at any time; but in fact it represents nothing of the kind. In truth it is not "accumulated," but is reinvested from time to time in the business of the company itself—in a

great majority of instances. With but very few exceptions we have in this country no great accumulated surpluses. They are expended surpluses, which means that they are not surpluses at all, but have been transformed into capital assets, subject to depreciation.

Our strongest corporations, by way of maintaining their financial strength, carry very large cash balances with the banks, but this is an expensive thing to do. For instance, assuming that the Steel Corporation's average cash balance of \$55,000,000 draws only the 2 per cent. interest usually allowed by the banks, the loss on it is about 3 per cent. per annum, or \$1,650,000. It takes a rich concern to be able to carry such a luxurious cash balance; and the better way of doing it—viz. to carry less cash and more securities of the most stable kind—seems likely to grow in popularity.

When securities are carried in the place of cash, it necessarily follows that only the most stable of bonds and notes should be selected. Even when they are carried not in the place of cash, but rather as a true surplus or reserve fund, this is almost equally true. The purpose of such a fund is to protect the given company in emergencies such as the panic of 1907 or the tight money period of 1903. At such times it is only gilt-edged bonds, for which there is always a ready market, upon which loans can invariably be obtained.

From these considerations it follows that securities held as pure investments by railroad industrial and manufacturing corporations should be different, and

should be handled differently, from those held by stock and bond brokers, banks, trust companies and insurance companies. These latter concerns are holding their securities for profit rather than as a cash equivalent, and they do not contemplate using them, except to a limited extent, in the capacity of reserve funds. Thus it is that an investment list suitable to a railroad industrial or manufacturing company cannot be made to show the 7 per cent. income, which banks and trust companies ought to be able to earn on their securities, or the 8 or 9 per cent. which stock and bond dealers should be able to earn. Securities which are stable enough to be held as reserve funds do not appreciate enough to show any such profits.

It is plainly inconsistent with strict conservatism for these companies to raise the yield on their investments by buying securities which will materially appreciate during periods of prosperity. But there are other methods which they may use with entire safety, and without introducing into their surplus or reserve fund any real element of risk.

First, they may select the bonds of companies which, while financialy strong, have become so at a comparatively recent date—that is, within a few years. The bonds of a concern like the Pennsylvania Railroad, which for decades has had a reputation for strength, are in great demand and therefore sell at high prices; but it is quite possible to find other strong companies, such for example, as the Southern Pacific, the Atchison

or the Northern Pacific, whose bonds are not in such great demand and do not sell so high. There is a constant shifting of position among leading corporations, and almost every year there are some which, while previously in a weak or mediocre financial position, become strong. The underlying or mortgage bonds of these companies are perfectly good, and have the added advantage of yielding a quarter to three-quarters of 1 per cent. more than those of corporations which have been in a fortified position a longer time.

Second, higher yields may be obtained without loss of safety by giving preference to the bonds of western and southern corporations and municipalities. The investor is human, and therefore he is most apt to buy the bond of the company which does business in his neighborhood, and with which he is familiar. Probably two-thirds or three-fourths of all the investment capital in the United States is in the hands of persons east of the Mississippi Valley and north of Mason's and Dixon's line. These men are not so familiar with companies doing business in the west and south; and in consequence, the bonds of those companies are less in demand, and show higher yields, even where there is the same degree of safety.

Third, yields may be improved by selecting from comparatively unpopular or unappreciated classes of securities. Prominent among these may be mentioned equipment trusts or car trusts; for these yield from a half to 1 per cent. more than other securities of equal

safety. They are very high grade, are comparatively independent of the fluctuations of earnings, and in long practice have almost invariably made good, even when the issuing companies fell into the hands of receivers. Another unappreciated class of securities is to be found in the bonds of railroad terminal companies. These are usually guaranteed by one or more roads, and are quite stable enough to serve as a reserve fund.

Every company naturally has its own peculiar necessities, but the following sub-division or diversification of an investment fund is suggested as being appropriate for railroad or industrial companies. This list is entirely made up of high grade stable securities, and is given merely as an example. The competent corporation treasurer who is familiar with investment matters, would find it no difficult task to substitute other bonds than those here mentioned without loss of safety or yield. He must, however, inspect his bond in each case, and not allow the desire for high yield to lead him into any of the multitudinous bonds which, although not really very stable or safe, are nevertheless very highly recommended.

5 per cent. in United States bonds yielding about 2 to 3½%
5 per cent. in foreign government bonds yielding 4 to 6¼%
5 per cent. in State bonds yielding 3¾ to 4¾%
15 per cent. in western municipals yielding 4½ to 5½%
10 per cent. in railroad mortgages yielding 4½ to 5¾%
20 per cent. in equipment trusts yielding 5 to 6%
10 per cent. in electric railway underlying mortgages yielding
4¾ to 6%
15 per cent. in short term notes yielding 5¾ to 6¾%
5 per cent. in terminal company bonds yielding 4½ to 5¾%
5 per cent. in gas and electric light bonds yielding 4½ to 5¾%
5 per cent. in water company bonds yielding 5 to 5¾%

It would not of course be good policy for a corporation treasury to attempt to increase its total investment income by shifting or changing its securities as described in the previous Chapter. This is true not only because the typical corporation managements are very bad judges of the stock and bond markets, but also because such shifting, if done to any large extent, might defeat the very purpose of the reserve fund. However, a moderate amount of changing in these investments could be made in accordance with the time, so as to increase the average yield by probably about 1 per cent.

When security prices are inflated—which time one may determine as described in Chapter 42,—a corporation may wisely sell its short term notes, gas and electric light company bonds and water company bonds, and handle the proceeds in either of two ways. In times of such inflation interest rates are always high, and the funds can be loaned in the money market to show a return of 5 or 6 per cent., or they can be reinvested in such securities as are mentioned at the end of Chapter 31. Either method serves to prevent depreciation of the investment account during the ensuing bear movement and to increase the total average yield.

Then, as the bear movement draws to a close, there are also two ways in which the total yield may be further increased. At such times the typical corporation, having greatly reduced its bills receivable, has on hand a lot of idle cash. This ordinarily goes into the banks,

where it draws either 2 per cent. or else nothing at all, and serves no useful purpose. There it awaits the resumption of business activity, which after a panic or great bear movement, is a year or thereabouts. Now, during this year the idle money could with entire conservatism be invested temporarily in such securities as are mentioned in the foregoing list. Furthermore, at such times the short term notes, gas and electric light bond and water company bonds can again be taken on at lower prices.

By these methods and without any expert knowledge of security markets, the ordinary railroad, industrial or manufacturing concern can obtain an average income of $5\frac{1}{2}$ to 6 per cent., while at the same time maintaining a general reserve fund which, under some occasional financial and industrial conditions, is sure to be enormously valuable.

XXXIII

Investments For Trustees and Estates

NO class of investors is much more important in any respect than estates and trustees. Neither is there any class of investors who encounter much more difficulty. The regulations of the various states so hamper them in their operations that they are under the constant temptation to sacrifice yield to safety, or else sacrifice safety to yield. They are under the direction of laws which are largely unintelligent and of courts, many of which have little or no expert knowledge of investments. Besides this, they are constantly tempted to select non-taxable issues in preference to other securities which are really safer; and during the past few years many an estate, especially in Massachusetts, has lost money through yielding to this temptation.

In this short chapter it is neither possible nor desirable to observe, except in the most general way, what are the duties of trustees in making investments. However, a few of the most fundamental may be mentioned. First, when the property is once well invested, the investment should remain unchanged except where there are good reasons for making changes, such as a loss of

security or yield. A rise in the price of a stock or bond, unless it be to speculative heights, is hardly a sufficient reason. Second, it is the duty of trustees not only to invest the funds safely, but also to so handle them as to obtain the current rate of interest. Third, it is their duty to comply strictly with the terms of the trust, and generally with the principles of investment laid down by the Legislature and the courts of their States.

Where the highest courts have not determined in what securities a trustee may invest, the safe method is to follow the savings bank laws; but in doing so judgment should be exercised, since it not infrequently happens that a corporation of great influence induces a legislature to make some of its securities legal for saving banks, even though they are not particularly secure.

Legislatures have made a great variety of rules covering these investments; but these rules are not binding upon a trustee who under the trust instrument receives special powers exceeding the rules. It has been a rather general practice for these instruments to give the trustee the larger discretion allowed by the so-called "Massachusetts rule"; and what this rule is may be seen from the following quotation from Chief Justice Field:

"A trustee whose duty it is to keep the trust fund safely invested in productive property, ought not to hazard the safety of the fund under any temptation to make extraordinary profits. Our cases, however, show that trustees in this Commonwealth are permitted to invest portions of trust funds in dividend-paying

stocks and interest-bearing bonds of private business corporations, when the corporations have acquired, by reason of the amount of their property and the prudent management of their affairs, such a reputation that cautious and intelligent persons commonly invest their own money in such stocks and bonds as permanent investments."

The New York rule up to a very recent date, at least, was very narrow, practically forbidding trustees to invest in the stocks of railroads, banks, or manufacturing or insurance companies. On the other hand, the above Massachusetts rule is very broad, and gives to the trustee with an expert knowledge of investments practically all the latitude he needs in handling the account. His principal temptation is to select non-taxables, which are not necessarily secure. Neither has he any chance to evade the tax, even where there is double taxation so plainly unjust that the most conscientious would gladly do so.

Investments of an untried or speculative nature are disapproved in all the States. So, too, are loans on personal securities, investments in unincorporated concerns, in patent rights, in second mortgages, and in all unproductive ventures. As to the regulations of the various States, the following brief abstract taken principally from the Trustees Handbook by Mr. August P. Loring may be of service. At least it tends to show in what respect the trustee must vary from the investment selection made hereafter.

Alabama permits trustees to invest only in securities of the United States and the various States, but not in those of private corporations. For Alaska, Arizona and Arkansas there are no authorities. In California the so-called "American rule" prevails; and this is that "a trustee must observe how men of prudence, discretion and intelligence manage their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested."

In Colorado they may invest in bonds of the United States or Colorado, but not in the securities of private corporations; Connecticut permits them to invest in savings bank securities and holds them rigidly responsible for funds placed in other securities. In Delaware the Massachusetts rule prevails. In Florida the rule is United States and State securities and bank stocks; and in Georgia it is State securities and other investments made under court orders. For Hawaii and Idaho there are no authorities; and in Illinois the Massachusetts rule prevails. In Indiana the courts have upheld the Massachusetts rule, but also the New York rule; and in Iowa the United States and State securities are approved. For Kansas there are no authorities.

Kentucky permits investments in mortgages, stocks and bonds, but not in railroads unless operated ten years without defaulting, or in municipal securities unless the municipality has gone ten years without de-

faulting. For Louisiana there are no authorities; and in Maine it is the Massachusetts rule. Maryland approves State securities and those advised by the court; and in Michigan the Massachusetts rule prevails. Minnesota requires the trustee to obtain court directions. The Massachusetts rule prevails in Mississippi and Missouri; and Montana specifies that the trustee shall seek to obtain a reasonable security and reasonable interest. For Nebraska and Nevada there are no authorities.

New Hampshire permits investments in savings bank securities, municipals, United States securities, and in the stocks and bonds of railroads whose rentals are guaranteed by the Boston and Maine, New Haven or the New York Central. In New Jersey the rule is the bonds of the United States or New Jersey, or certain municipalities and also savings bank securities. There is no authority for New Mexico. United States and State bonds, and the Massachusetts rule prevail in North Carolina; and in North Dakota the American rule prevails. In Ohio trustees must get court approval for investments other than United States or State securities. For Oregon there are no authorities.

Pennsylvania does not permit investment in securities of business corporations, but does permit those in United States, State or municipal bonds, and in the bonds of school districts, or in real estate bonds. In Rhode Island it is Massachusetts rule, as it is also in South Carolina. In South Dakota the rule is reasonable security and reasonable interest; and in Tennessee trustees must re-

port to the county court investments in securities other than those of the United States. Texas follows the Massachusetts rule, and for Utah there are no authorities. In Vermont court directions must be obtained, and the Massachusetts rule generally prevails. The same rule prevails for Virginia and Washington. In West Virginia, United States and State securities are the rule. Wisconsin permits investments in municipals, governments, and in the securities of railroads which have paid dividends for ten years on their entire capital, and also on real estate securities. For Wyoming there are no authorities.

In view of these general restrictions the following general suggestion is made. For those living in States where the Massachusetts rule prevails, it can be followed almost literally, while in many other States it can be taken with the approval of the courts; but in other States great modification may have to be made unless the trust instrument confers sufficiently wide powers.

5 per cent. in United States bonds yielding about 2 to 3½%
5 per cent. in foreign government bonds yielding 4 to 6½%
5 per cent. in State bonds yielding 3¾ to 4¾%
5 per cent. in municipals yielding 4½ to 5½%
25 per cent. in railroad equipment trusts yielding 5 to 6%
10 per cent. in railroad convertible bonds yielding 4¾ to 5½%
25 per cent. in short term notes yielding 5½ to 6¾%
10 per cent. in public utility bonds yielding 4½ to 6½%
10 per cent. in industrial convertible bonds yielding 4¾ to 5½%

As to this subdivision or diversification, its adaptation to the needs of trustees consists in its fair yield, its possibilities of profit, its practical certainty of winning court

approval in States where the Massachusetts rule prevails, and in the frequency with which it permits the trustee to reinvest large portions of the fund. Where long term bonds are taken he seldom has opportunity to reinvest and thereby enhance the yield. Good yields can hardly be obtained without constantly reinvesting in accordance with changes in business conditions and in the position of the security markets; and yet the desire to obtain a larger yield would hardly be regarded in court as a sufficient reason for selling long term bonds.

Hence it is a decided advantage that in the list suggested, 25 per cent. consists of equipment trusts maturing at near-by dates, while another 25 per cent. is made up of corporation notes also having short maturities. Furthermore 10 per cent. is in railroad convertibles. These are good, and in bull markets they sell at high speculative prices; and that very inflation of price would be a sufficient reason for selling and thereby obtaining a profit on the principal for the beneficiary. In like manner 10 per cent. consists of industrial convertibles, of which the same holds true. Of the entire list the trustee within a short time would have the opportunity to reinvest about 70 per cent. in accordance with changed conditions.

The United States bonds serve very well as "window dressing"; the foreign governments, municipals and State bonds will serve the same purpose. All these, if properly selected, are very high grade, and can be held through thick and thin without any danger of material

depreciation in price. Furthermore, the trustee, without getting into trouble, can really often take advantage of a bear movement in security prices. If, for example, he finds by study of the indications described in Chapter 42, that a bear movement is presumably about ended, he can reinvest a large portion of this fund. Fifty per cent. of the total fund always represents short maturities, and besides this amongst the other 50 per cent. there are bound to be quite a number of bonds close to maturity. As any of these bonds approach maturity, they are practically certain to sell so close to par that they can properly be sold even a few months before they mature. Such a policy gives the trustee a chance to reinvest at a time when bonds are cheap.

Furthermore, the 20 per cent. invested in convertibles and the 10 per cent. invested in public utility bonds are very likely, during a bull movement, to sell at prices above their intrinsic values. If the trustee finds that under the laws and court rulings of his State this would be a sufficient reason for selling them then around the top of a bull movement, he has an opportunity to sell and invest the proceeds in short term equipment trusts or other notes running about a year or a year and a half. As this is the approximate duration of an ordinary bear movement such notes would mature just at the time when he would later on wish to reinvest at bargain prices. By these methods, at least in some States, the yield can be brought up to $5\frac{1}{4}$ to $5\frac{1}{2}$ per cent., whereas without such close attention a yield of $4\frac{1}{2}$ per cent. is about all that could safely be obtained.

XXXIV

Investments For Colleges, Hospitals and Other Institutions

HERE was a time when any business man of sound sense was a capable manager of investments, but that time has passed. There was also a time when every man built his own hut to live in, but now we employ architects, builders and landscape gardeners. Even in quite recent years manufacturers designed and built their own mills, but now the mill architect has an established place. Times have changed, and with them the matter of handling investments, instead of being a small part of the common knowledge which every business man is supposed to possess, has become a subject of specialized study and expert management.

Our colleges and institutions, however, have very generally adhered to the old idea that any good business man was a good investor. Indeed, seats of learning in this and all times have been bulwarks of conservatism and defenders of the old against the new. Inventors and reformers in the science of investment, as in all other fields, have been generally ridiculed, scorned or opposed. Some generations ago we used to call the advocate of a new idea (whether it was religious or scientific), a heretic, and excommunicate him, or possibly burn

him at the stake; but now the tables have been turned. Whereas the man of new ideas used to be the punished, he is now the punisher. In every one of our big industries those who refuse to adopt new ideas are being punished through the deadly competition which progressive men are giving them.

A few of our leading universities have developed the study of economics to such a point as to make it of practical value, not only to the learning public, but also to the institutions themselves. While mental culture undoubtedly should remain the primary aim of these institutions of learning, practical finance is intricate enough in both theory and application to give even the best brains all the mental gymnastics they may require. In particular the science of investments seems bound to receive more and more attention from the economic departments of colleges and universities, because it has grown so rapidly in importance to the public. The corporate form of ownership, especially during the past fifteen years, has made vast strides and is still doing so. With the spread of this form, ability to analyze stock and bond values has become correspondingly more important to every endowed institution.

From now on the college whose board of overseers or trustees is progressive in the scientific management of its investments is likely to punish the one whose board is not progressive by a similar sort of competition to that which has been experienced in business life. The success which a college or university can accomplish

depends much upon its yearly income, and that in turn depends considerably upon efficient and scientific management of its investments. These are some of the reasons for believing that the subject will be given more attention in the future than in the past.

As an illustration of the moderate yield sometimes obtained by these institutions, even where a fair degree of risk has been assumed, the following is a summary of the securities held a few years ago by one of the leading universities:

Security—	Investment	Income	Yield
Mortgages and notes	\$ 1,310,000	\$ 71,610	5.47%
Municipals and governments	108,584	4,727	4.35
Railroad bonds	5,147,000	211,575	4.11
Street railway bonds	1,584,641	68,405	4.32
Other bonds	2,340,487	105,760	4.52
Railroad stocks	1,121,817	55,454	4.93
M'f'g and Telephone stocks	473,062	25,574	5.41
Real estate stocks	695,421	25,936	3.73
Other stocks	132,107	6,000	4.54
	<hr/>	<hr/>	<hr/>
	\$12,913,119	\$575,041	4.45%

More than 18.7 per cent. of this entire investment in securities was placed in stocks; and among these were found considerable amounts of New Haven, Chicago and St. Paul, New York Central, and other issues which, since the date of the above statement of holdings, have suffered from reduced dividends and bad breaks. In brief, the security list was not one of exceptional stability, and yet its yield was only 4.45 per cent. The very farthest thing from my intention is to criticise the management of any particular institution, and the sole

purpose of this illustration is to point out that through a closer study of investments better results can be obtained. A list showing a yield of only 4.45 per cent. should have shown a degree of stability which this one did not possess.

As these institutions are accountable to no one except themselves and their patrons, their handling of their investments is less hampered by arbitrary restrictions than is the case with estates. They cannot of course afford to speculate in any sense of the term; but at the same time they can shift their investments from time to time in accordance with changes in business conditions, and in the position of the stock and bond markets. This very shifting—into securities which will appreciate when the market is low, and into those which will not depreciate when the market is high—should materially enhance their income.

Besides this, many additional thousands can be saved by selecting carefully within each class of securities. A comparatively unknown bond sells lower and yields more than a bond of equal quality which is known; western securities, since the average rate of interest is higher in the west, generally yield more than eastern securities of equal quality; bonds which are secured by a very wide margin of safety usually yield more than others which, while no more stable, are secured by a larger percentage of physical property, or by more rigid legal restrictions; and the bonds of small companies often yield more than those of larger and better known concerns. The following suggestion may be offered:

- 15 per cent. in railroad equipment trusts yielding 5 to 6%
- 15 per cent. in street railway bonds yielding 5 to 6 $\frac{1}{8}\%$
- 10 per cent. in railroad common stocks yielding 6 $\frac{1}{4}$ to 7 $\frac{1}{4}\%$
- 15 per cent. in short term notes yielding 5 $\frac{5}{8}$ to 6 $\frac{3}{4}\%$
- 15 per cent. in convertible bonds yielding 4 $\frac{1}{4}$ to 5 $\frac{1}{4}\%$
- 15 per cent. in manufacturing company bonds yielding 6 to 7%
- 15 per cent. in preferred stocks yielding 5 $\frac{1}{2}$ to 7 $\frac{1}{4}\%$

A list carefully made up in this manner should show at least as great stability as the actual list mentioned above, and should yield a full one per cent. more on the entire investment. If this be true, it means that the difference in income between handling the investment through an expert study, and handling it in the old fashioned manner, is about 22 per cent. Street railway bonds are highly desirable because many of the companies operate in sections where the average price of capital is high, and are not big enough to finance themselves with low-cost capital in the big financial centers.

Short term notes must be selected with a constant eye upon the earnings and strength of the issuing corporation. Convertible bonds are attractive only when stock and bond prices are below average, so that the convertibles show a fair yield plus a definite promise of a profit on the principal. The attractiveness of manufacturing company bonds lies in the high yield which may be obtained through careful selection. In buying preferred stocks great care must be used to avoid those which are sadly watered, and with such care, yields close to 6 per cent., together with a high degree of safety, and with a promise of profit on the principal, may be obtained.

Such a list as this is surely not lacking in stability, and yet if carefully selected when the market is low, it would show an average yield of $5\frac{1}{2}$ to 6 per cent. Furthermore, if a reasonable profit on the convertible bonds and preferred and common stocks were realized, the yield could be further raised to some figure between $6\frac{1}{4}$ to $6\frac{3}{4}$ per cent. When prices become substantially higher than the average or when the factors mentioned in Chapter 42 indicate that a bull movement is drawing to a close, the investment may wisely be shifted into such securities as the following to be held for a period lasting up to and including the next bear movement.

15 per cent. in U. S. Government bonds yielding $1\frac{3}{4}$ to 3%
20 per cent. in bonds of various states yielding $3\frac{3}{4}$ to $4\frac{3}{4}\%$
15 per cent. in foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
25 per cent. in good municipals yielding 4 to $4\frac{3}{4}\%$
15 per cent. in the best railroad mortgage bonds yielding $4\frac{1}{8}$
to $4\frac{3}{4}\%$
10 per cent. in equipment trusts yielding $4\frac{3}{8}$ to 5%

XXXV

Investments For Business Proprietors and Partners

FINANCIAL papers frequently give lists of bonds suitable for "business men", but there are all sorts of business men. The man at the head of a concern properly comes under this heading, and so do the clerks, bookkeepers and salesmen. All of these men do business of their kind, but it is only those at the top who have had the experience and training of judgment which fit them to pass upon the merits and demerits of various classes of securities. Hence it is that the title of this Chapter is quite specific.

The same training which enables a man to rise to the head of a firm, or to fill the position if inherited, should enable him with a little additional study to distinguish clearly between good, doubtful and poor securities. Special training of judgment is as necessary in handling investments as it is in law, medicine or engineering; and the man who has it may safely buy certain classes of securities which to the man who does not have it would result in almost certain loss. For instance, there are all sorts of corporation notes; and a successful business man is so thoroughly familiar with the earmarks of sound management that he can select the wheat from

the chaff, and buy on breaks perfectly safe corporation notes which will yield him about 6 to $6\frac{3}{4}$ per cent.

Yield is partly a question of training and experience; and the more of these the investor has the higher is the average yield which he can obtain without jeopardizing his capital. Next to stock and bond brokers and bankers the proprietors and partners of business concerns ought usually to be the most expert judges of values. They should, therefore, be able to obtain a yield beyond the reach of persons of less experience. Investment opportunities are greatly diversified as compared with what they were a few years ago, so that men of this class or caliber should, during bull markets, be able to net 7 or 8 per cent.

It is here suggested that 15 per cent. of the total investment be put in high grade gas company, street railway and steel and iron bonds. This sixth of the total placed in such stable securities would materially increase the stability of the total investment, and prove very reassuring in case of unexpected happenings. However, it is not intended that only 15 per cent. should be securities of high stability, for business men of this type should be able to choose corporation notes and convertible bonds which while showing a good return will also prove decidedly stable. Hence the dependable and very stable type of bonds should constitute not merely 15 per cent., but rather about 50 per cent. of the total list.

High grade is not the only advantage of corporation notes, for these mature at near-by dates, thus giving

occasion to reinvest the money; and for the man capable of doing this wisely it is desirable to shift his list from time to time in accordance with changing conditions. Such notes, moreover, are excellent collateral for loans, and 15 per cent. of the total investment may well be placed in them. Neither is there any lack of opportunity for the exercise of judgment in the selection of convertible bonds, both railroad and other; for out of all the convertible bonds usually quoted, probably in half or two-thirds the convertible privilege will never be worth anything. Hence in selecting, the investor will choose a convertible which is fairly well secured and shows a reasonable yield. Besides this, to satisfy him it must be convertible into a stock having enough intrinsic merit and earning power to give definite promise that its price will so rise as to enhance the value of the convertible privilege.

Manufacturing company bonds are attractive because of their high yield; and here too, trained judgment plays a most important part. There is no kind of business which can make so much money on the one hand, or collapse so completely on the other, as a manufacturing business. The assets of a railroad are worth something, whether the company is earning money or not, because in any event some other railroad can take them and use them profitably, but the assets of a manufacturing plant depend almost wholly for their value upon their earning power. If the company isn't making money it has no right of way, or other monopoly element, to

give it value; and its assets, practically speaking, are junk.

For many reasons the investor in selecting manufacturing company bonds will entirely avoid those which are in the prospective stage, and will give preference to those of companies which show good earnings not for one year only, but for a series of years. If a manufacturing concern does not earn two to five times its fixed charges over and above maintenance and depreciation, its bonds hardly appear attractive.

Still more is judgment required in selecting stocks. There are all sorts of preferred industrials which are highly recommended by old investment houses; but experience indicates that the successful business man who trusts to his own judgment will fare better in the end than the one who acts upon advice. The principal point to remember is that stocks are not promises to pay, but are merely probabilities of profit. In practice a board of directors may discontinue dividends almost any time, and the stockholder can seldom enforce in the courts any claims that dividends are due him. To own a stock is to own a share in the net profits of the given concern, over and above its fixed charges; and there is nothing like experience to determine how valuable such a share in net profits may be. Generally speaking, it is therefore desirable to avoid investing in the stocks of new concerns. As speculations they may be excellent, but that does not prove that they are suitable for the man who wants a fairly sure return on his money.

Having in mind these considerations it is suggested that business proprietors and partners subdivide their total investment in some such manner as the following:

5 per cent. in gas company bonds yielding $4\frac{1}{8}$ to $5\frac{7}{8}\%$
5 per cent. in street railway bonds yielding 5 to $6\frac{5}{8}\%$
5 per cent. in steel and iron bonds yielding $5\frac{1}{4}$ to $6\frac{3}{4}\%$
15 per cent. in corporation notes yielding $5\frac{5}{8}$ to $6\frac{3}{4}\%$
10 per cent. in railroad junior bonds yielding $4\frac{3}{4}$ to $6\frac{1}{2}\%$
20 per cent. in convertible bonds yielding $4\frac{3}{8}$ to $5\frac{1}{2}\%$
15 per cent. in manufacturing company bonds yielding 6 to 7%
5 per cent. in copper mining bonds yielding 6 to $7\frac{1}{4}\%$
10 per cent. in industrial preferred stocks yielding $6\frac{1}{4}$ to $7\frac{1}{4}\%$
5 per cent. in railway common stock yielding $6\frac{1}{4}$ to $7\frac{1}{4}\%$
5 per cent. in copper stocks yielding $6\frac{1}{2}$ to $8\frac{1}{4}\%$

A list of this type bought during the latter part of a bear movement should yield between $5\frac{3}{4}$ and $6\frac{1}{8}$ per cent. on its actual cost. In it the only securities which need not be expected to show a profit on the principal are the 15 per cent. invested in high grade bonds of gas companies, street railways and iron and steel companies. Naturally the profits on the corporation notes will be small, but there should be some profit. The convertible bonds in the course of a bull movement ought to yield several points profit, and the manufacturing bonds should show almost as much appreciation, together with a higher current yield. The copper mining bonds, assuming that good ones may be available, should show a big profit; and an average rise of 10 to 20 points, varying according to the extent of the bull movement, is not improbable. After the upward movement has seemingly about spent itself it should prove advantageous to

dispose of almost the entire list of these investments, and change into the following—only to repeat the operation during the next bull movement.

20 per cent. in bonds of various states yielding $3\frac{3}{4}$ to $4\frac{3}{4}\%$
15 per cent. in foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
25 per cent. in municipals yielding 4 to $4\frac{3}{4}\%$
15 per cent. in best railroad mortgage bonds yielding $4\frac{1}{8}$ to
 $4\frac{3}{4}\%$
15 per cent. in very best short term notes yielding $4\frac{1}{4}$ to 5%
10 per cent. in equipment trusts yielding $4\frac{3}{8}$ to 5%

XXXVI

Investments For Professional Men

WITHIN this class of investors must be included lawyers, doctors, teachers, writers, ministers, scientists, and all sorts of professional men. Of course no investment suggestion could exactly fit all these men. There are, for example, a great many corporation lawyers whose experience thoroughly fits them to judge securities in an expert manner; and these can afford to change their investments oftener and buy a larger percentage of securities showing a lower degree of safety and a higher yield. However, the investment needs of professional men, as a class, undoubtedly call for securities of a high degree of safety, and a fair yield.

The doctor, lawyer or teacher who makes any sort of a success must do a huge amount of brain work, and after the accomplishment of his duties, he has left neither the time nor the mental energy for the study of the intricacies of finance. Medicine, for example, is one profession and finance is quite another. To mix the two might be very harmful to both. High yields must be obtained principally by a continual shifting of investments made in accordance with current changes in financial conditions and in the position of the security markets. Such shifting can be done only by those who give constant attention to finance and securities; and profes-

sional men, because of the very nature of their work, cannot do this.

In the suggestion here made it is therefore contemplated that the investor will give attention only occasionally to his list of securities, and that these occasions will be rather accidental, depending upon when the particular individual happens to have leisure time. They will doubtless be quite independent of the particular dates upon which significant changes occur in the stock and bond markets. Hence the securities purchased must be of the kind which do not require constant watching. They must not be speculative securities, because no professional man can succeed with one eye constantly on the stock market.

Nevertheless, men of this class should be able to shift their investments often enough to materially enhance the yield. That is to say, when prices are generally below intrinsic values, and also below average, a considerable part of the investment should be put into good stocks and convertible bonds in order to get the advantage of the succeeding recovery. Prices never remain long just at the level of intrinsic values. Depressions or political changes cause them to go below, whereas booms in business cause them to rise above values. Hence they constantly cross and recross the value line and never stay upon it long. The speculative way to take advantage of this unending movement is to buy and sell on margin, but the conservative investment way is to buy outright a few of the best stocks and convertible bonds when

prices are low, and sell them all out when the stock market is booming. In pursuance of this plan the following suggestion is made:

5 per cent. in foreign government bonds yielding 4 to $6\frac{1}{4}\%$
5 per cent. in municipals yielding $4\frac{1}{2}\%$ to $5\frac{1}{2}\%$
5 per cent. in gas and electric bonds yielding $4\frac{1}{8}\%$ to $5\frac{7}{8}\%$
5 per cent. in street railway bonds yielding 5 to $6\frac{5}{8}\%$
10 per cent. in railway equipment trusts yielding 5 to 6%
10 per cent. in convertible bonds yielding $4\frac{3}{8}\%$ to $5\frac{1}{2}\%$
5 per cent. in steel and iron company bonds yielding $5\frac{1}{4}$ to
 $6\frac{3}{4}\%$
10 per cent. in manufacturing company bonds yielding 6 to 7%
5 per cent. in copper mining bonds yielding 6 to $7\frac{1}{4}\%$
15 per cent. in short term notes yielding $5\frac{5}{8}\%$ to $6\frac{3}{4}\%$
15 per cent. in railroad preferred stocks yielding $5\frac{1}{2}\%$ to $6\frac{3}{4}\%$
5 per cent. in industrial preferred stocks yielding $6\frac{1}{4}\%$ to $7\frac{1}{4}\%$
5 per cent. in railroad common stocks yielding $6\frac{1}{4}\%$ to $7\frac{1}{4}\%$

An investment carefully made up in this way should show an average yield, including therein the profit on the principal, of $6\frac{5}{8}$ to $7\frac{1}{4}$ per cent. during a bull movement. This is of course upon the condition that the securities be bought during the latter part of a bear movement, or the very early part of the succeeding bull movement. The manner of determining the time to make the purchase, and of doing so upon the basis of scientific economic principles rather than mere guess work is described in Chapter 42. At such times the investor need not hesitate to purchase securities showing yields of more than 6 per cent., even though such high yields in normal times would be an indication of poor quality. But at the same time in buying these high yield securities, the financial reports of the issuing com-

panies should be examined as described in preceding chapters to determine whether the given companies are in good condition.

When a general rise in securities has proceeded for a period of one to three years, and financial conditions are such as to foreshadow a bear movement, the above list should be entirely revised. It is of course impossible and unnecessary to select the exact moment when a general decline is going to occur. Ordinarily if the investor gets within six months of the right time he is doing quite well enough for all practical purposes. An investment to hold throughout the bear movement may well be made up as follows:

15 per cent. in U. S. government bonds yielding $1\frac{3}{4}$ to 3%
20 per cent. in bonds of various states yielding $3\frac{3}{4}$ to $4\frac{3}{4}\%$
15 per cent. in foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
25 per cent. in good municipals yielding 4 to $4\frac{3}{4}\%$
15 per cent. in best railroad mortgage bonds yielding $4\frac{1}{8}$ to $4\frac{3}{4}\%$
10 per cent. in equipment trusts yielding $4\frac{1}{8}$ to 5%

XXXVII

Investments For Salaried People

IF this term were stretched to its widest significance, it would include the hundred thousand dollar presidents of railroads, banks and other corporations; but it is here intended to include only the classes commonly spoken of as salaried people. The particular class here referred to consists of course of those receiving yearly salaries of about \$4,000 or less; for those receiving more than this, as a usual thing, have acquired an amount of business experience and skill in judging values which should enable them to manage their investments in ways such as were suggested for business proprietors and partners.

Manifestly the chief difference between these two classes of investors is the difference in business experience and training. Moreover, as a rule the smaller the amount to be invested the more anxious is its owner to obtain a high rate of income, and the greater is the risk he assumes. This disposition to assume risks is sometimes due to inexperience, and sometimes to a feeling that the assumption of rather speculative risks offers the only hope of escape from poor circumstances. Whatever the reason, it is surely true that an investment suggestion which did not afford at least a chance of large profits would fall flat with a very large proportion of salaried people.

The task of making such a suggestion is on this account a difficult one. What is wanted is a method of doing a radical thing conservatively; and while this of course is impossible, there is here suggested about the safest possible way of obtaining a fair yield, together with a chance for large profits. In the suggestion for business proprietors and partners the securities advised throughout almost the entire list were those which involved some slight risk, and required the exercise in their selection of unusually good judgment. Salaried people, however, do not have the training necessary to develop the judgment to such a high point; and therefore a different method of selection has to be followed.

Hence the method here offered is to put by far the greater part, say about 80 per cent., of the total investment into absolutely safe bonds and notes which should make good in almost any sort of a market. In this way the possibilities of loss are greatly reduced, and an assured income which will average $4\frac{3}{4}$ to $5\frac{3}{8}$ on the total investment may be obtained. Then to obtain the chance of large profits it is suggested that the other 20 per cent. be placed in stocks, which, while promising in themselves, are nevertheless of a more speculative type. By this method it is sought to reduce the risk absolutely to 20 per cent. In practice it would be reduced lower than that because the stocks, even if they should show a loss, would probably not show a greater loss than 25 or 50 per cent. of their cost prices. For this reason the risk on the total investment should practically be down

in the neighborhood of 10 per cent. The suggestion is as follows:

- 10 per cent. in municipals bonds yielding $4\frac{1}{2}$ to $5\frac{1}{2}\%$
- 10 per cent. in foreign governments yielding 4 to $6\frac{1}{4}\%$
- 5 per cent. in gas and electric light bonds yielding $4\frac{1}{8}$ to $5\frac{7}{8}\%$
- 10 per cent. in railway equipment trusts yielding 5 to 6%
- 10 per cent. in convertible bonds yielding $4\frac{3}{8}$ to $5\frac{1}{2}\%$
- 10 per cent. in steel and iron company bonds yielding $5\frac{1}{4}$ to $6\frac{3}{4}\%$
- 10 per cent. in manufacturing company bonds yielding 6 to 7%
- 5 per cent. in railroad mortgage bonds yielding $4\frac{5}{8}$ to $5\frac{3}{8}\%$
- 10 per cent. in short term notes yielding $5\frac{5}{8}$ to $6\frac{3}{4}\%$
- 5 per cent. in railroad common stocks yielding zero to 7%
- 5 per cent. in industrial common stocks yielding zero to 8%
- 10 per cent. in copper stocks yielding zero to 10%

Where the sum is small it is of course impossible to follow this suggestion literally. However, a great many good bonds in denominations of one hundred dollars to five hundred dollars can be found. Where the sum is too small to cover this diversified list, even with low denomination bonds, then the general principle may be followed by putting 80 per cent. of the total into good bonds such as suggested, and putting the balance into stocks.

The object of putting 20 per cent. into the more speculative stocks, such as non-dividend paying rails and low priced industrials and coppers, is to obtain the largest possibility of profit with the smallest risk. In bull markets stocks of this class appreciate fully twice as much as standard dividend-paying railroad shares or preferred industrial shares. For instance, from the low point of 1903 to the high point of 1906 twenty-one standard rails

appreciated 61.3 per cent., while twenty-seven rails which paid no dividends in 1903 appreciated 136.9 per cent.; and twenty rails which paid no dividends in 1903 or 1906 rose 131.1 per cent.

Salaried people, as a class, are the victims of every fake mining scheme, and of almost every other stock-selling scheme. They are visited and circularized by the agents of crooked concerns, and thousands of them every year are induced to put their money into absolutely worthless stocks. Other thousands, after watching a bull market in Wall Street for a year or two, finally become enthusiastic and buy some low-priced shares on the theory that in the next ensuing two years said shares will go up as much as certain other stocks have in the past two years. At the top of a bull market one continually hears this kind of reasoning. The theory is all wrong, because low-priced shares at such times, instead of being cheap, are the dearest of all. At the top of a bull movement anything which has any value at all is not low-priced; and the shares which are low-priced are so because they are almost worthless. Bearing these facts in mind those who have not had time to make an extended study of investments themselves will find the following to be good practical rules for avoiding losses.

(1) Never buy stocks of agents or solicitors unless they represent bond houses which have a good rating in Dun's or Bradstreet's.

(2) Confine your purchases principally to securities quoted in the markets of New York, Chicago, Boston and Philadelphia.

(3) Let the securities of bankrupt companies, or concerns in receivers' hands entirely alone. Never, even in panic times, buy a bond yielding over $6\frac{3}{4}$ per cent., or a short term note yielding over 7 per cent., as the high yield is evidence of great risk. It is unsafe to buy railroad bonds yielding over $5\frac{1}{2}$ per cent., or industrial bonds yielding over $6\frac{1}{4}$ per cent.

(4) The bonds and stocks of companies which have made less than three annual reports of earnings are unseasoned, and are to be generally let alone.

(5) Unlisted mining stocks, together with the great majority of those listed on curb exchanges, should not be touched.

Even in the selection of bonds it is a money-saving plan not to buy the bonds of companies which increase their capitalization too rapidly. From this point of view it may be said that capitalization is growing too rapidly when the rate of increase much exceeds the rate of increase in gross earnings—taking the average from three to five years as a basis. Such a policy during the past few years would have saved New England investors millions of dollars' loss in New Haven securities.

In following this plan it is of course an extremely important question when to buy low-priced speculative shares of promise; for if not bought cheaply they will not fulfill their promise of profit. Manifestly there cannot be any fixed rule, but the occasions for buying come only once in two to five years. Bankers, stock and bond brokers and other expert judges of financial

conditions need no instruction when to buy. However, those who do not devote themselves to banking and finance will find the course of the bond market to be the best practical guide. A number of financial papers, including the Wall Street Journal, the Boston Commercial, and others, publish averages showing the course of bond prices; and these may be very useful to the occasional buyer of stocks.

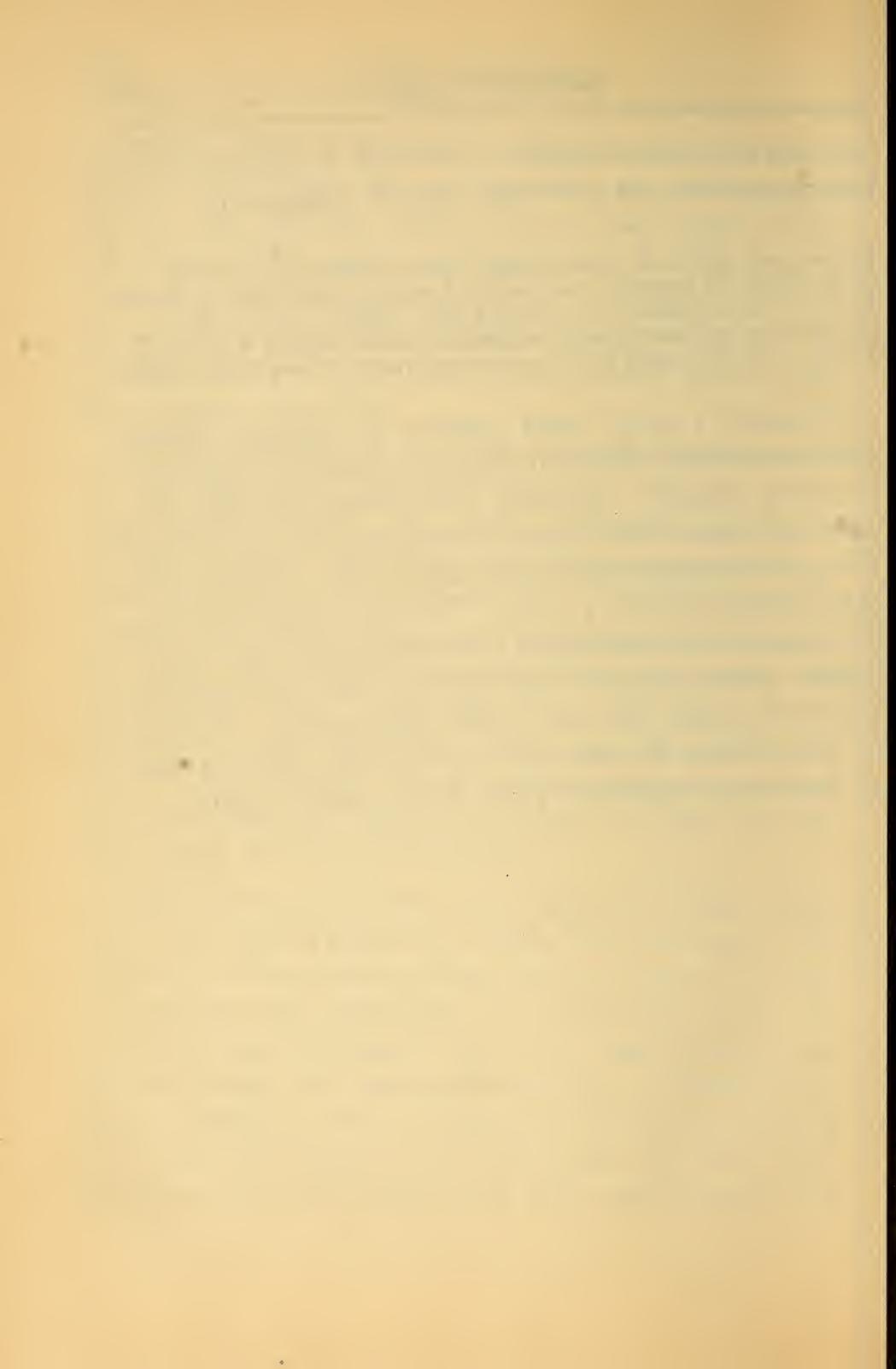
Those not especially familiar with the intricacies of the interpretation of financial statistics will find it best to be guided entirely, and almost blindly, by these bond averages, and to follow the method of interpretation of these averages given in Chapter 42. Through this policy one may sometimes fail to take advantage of an upward movement in security prices, but more often he will avoid the purchase of speculative securities right in the middle of a bear movement when great depreciation of prices is yet to occur. These recommendations are based of course upon the obvious fact that it is best for salaried people to act conservatively.

After bond prices have risen seven or eight points from the highest point of a recent bear movement and stock prices have risen at least twice as much, it is time to consider the advisability of exchanging from the securities last mentioned above to a more stable class of investments. In making this exchange salaried people may reasonably attempt to interpret the generalizations in Chapter 42, because even if they make an error it will involve no loss of principal, but only some reduction of

the rate of income received. As a list to hold during a bear movement the following may be suggested:

15 per cent. in U. S. government bonds yielding $1\frac{3}{4}$ to 3%
20 per cent. in foreign government bonds yielding $3\frac{3}{4}$ to $5\frac{1}{4}\%$
15 per cent. in bonds of various states yielding $3\frac{1}{2}$ to $4\frac{1}{4}\%$
30 per cent. in lowest yield municipal bonds netting 4 to $4\frac{3}{8}\%$
20 per cent. in lowest yield equipment trusts netting $4\frac{1}{4}$ to $4\frac{5}{8}\%$

Naturally a great many persons of moderate means will not have a sufficient investment account to subdivide it in this manner. However, this presents no difficulty, since any one of the classes of securities here mentioned will prove entirely stable and satisfactory during a general decline or even a panic. The reason for advising the selection of municipals and equipment trusts showing the lowest yields is that these are the very securities which also show the very least depreciation. Absence of depreciation at such times is far more valuable than an increase of one-half a point or one point in yield.



XXXVIII

Investments For Clerks and Laborers

“**T**O him that hath shall be given”, is nowhere better illustrated than in the investment field. The man who has thousands to invest has everything to assist him. In the first place, the great mass of bonds are in thousand dollar denominations, thus giving him his choice of all the tens of thousands of bonds issued in the United States and other countries. Secondly, there is enough commission or profit for the broker on his thousand dollar investment so that his business is well worth having, for which reason he can obtain free no end of expert advice. Stock exchange houses, bond houses, trust companies and national banks all stand waiting at his elbow to give him the best of their services and opinions. If in doubt, for example, as to which of two bonds he will choose, he can go to the statistical department of a big bank, trust company or bond house, and obtain every minute detail as to the merits and demerits of the two bonds.

Thirdly, his thousand dollar investment means that he moves among thousand dollar friends. That is to say, many of his friends are keen and successful business men who are themselves expert judges of investments, and are often able to advise him of excellent opportunities. Fourth, his contact with bankers and

financial men gives his mind a training which a clerk or laboring man can seldom attain. He learns which are the most reliable bond houses, which are the most conservative railroads and corporations, where to find the quotations of their bonds, how to figure the yields, and how best to handle the whole matter to his own advantage.

Thus it happens that the smaller the investment the more difficult it is to handle it successfully. To still further demonstrate the old Bible saying just quoted, this greater difficulty in handling the smaller investment has to be met, not by the banker whose financial skill fits him to meet it, but rather by the clerk or laboring man whose daily routine of drudgery prevents him from ever acquiring financial skill. This chapter, therefore, is to those who do not know how; and those who do know are invited to stop reading before being wearied with recitals of knowledge they already possess.

Primarily the investment account of a clerk or laboring man is a savings account; and his principal reason for investing the money in securities himself, rather than letting a savings bank do it for him, is that he wants the additional income. Savings banks will pay him 4 per cent. on his money, whereas they themselves obtain 5, 5½ or 6 per cent. This extra 1 or 2 per cent. pays the savings banks only a moderate profit over and above operating expenses. However, the small investor wants to get this profit for himself. His first principle, therefore, is that he must not buy any security which is less safe than a savings bank deposit.

Second comes the question how to select such securities. He cannot well select them himself because of lack of training and experience, and he must, therefore, obtain advice. To obtain good advice is always difficult, and his best method will be to seek it from some personal acquaintance who successfully handles considerable investments for himself. It is equally important to observe how and from what source he should not obtain this advice.

First, he should not obtain it from the clerks or underlings in any savings bank, trust company, bond house or stock brokerage firm. Such counsel generally proves worse than useless. The writer recalls being advised by the receiving teller of a well known bank to buy a bond which never was anything but an outrageous speculation, and which later sold at 25 cents on the dollar. Second, he should not imagine that when he steps into the private office of some high official of a bank or a bond house, he is in the holy of holies. On the contrary, he is in the office of a firm which has goods to sell, and is going to try to sell them; and the advice he gets is no more certain to be disinterested and literally truthful, than is the advice he gets in a high class department store as to the character of the goods offered for sale.

Third, if he seeks information from the investment department of magazines or newspapers, he should bear in mind that the financial interests of these publications are generally identified with those of their advertisers rather than those of their subscribers. If, for example,

such an investment department at one stroke incurs the enmity of a subscriber by getting him to purchase a fourth rate bond at a first rate price, and secures the friendship of a financial advertiser by bringing about the sale of said bond at a high price—the newspaper will not lose thereby. The loss of a subscriber will amount to a few paltry dollars per annum, whereas the additional advertising obtained may count into hundreds and even thousands.

It is not meant that there is anything more than the average percentage of dishonesty amongst either financial publications or dealers in securities. All that it is intended to point out is that in going to such an investment department of a newspaper or magazine for advice, the clerk or laboring man is relying on those who, if they are dishonest, can make a profit by deceiving him. The great majority of dealers in bonds show more than average honesty, and the investment departments of magazines and newspapers are as honest as they can afford to be. Indeed, there are some which steadily refuse to give untruthful advice even though by so doing they might secure valuable advertising.

The sum of the whole matter of advice is that the uninitiated must obtain from some personal acquaintance whose ability to invest wisely, and whose disinterestedness are both beyond question. A good method is to write to the inquiry departments of some prominent financial magazines and newspapers, and also to two or three of the best known bond houses, and ask for the

names of a few of the best and safest hundred dollar bonds and preferred stocks. The answers will not be long in coming, as all of these houses have a personal interest in developing a patronage or clientele. After a few of the answers have been received, it is then a good plan to take them to one's savings bank, or employer, or to the trustee of some estate, or to any fair-minded man who has had broad experience with investments, and ask to have the best selections from the list received.

As already observed, only the safest securities should be bought. In practice these are of two classes: First, there are high grade bonds; and second, the best preferred stocks listed on the leading stock exchanges are safe, if bought five points or more below the average prices, especially for a period of years. As to bond investments the person of small means is of course limited to issues of small denominations. On this account there is appended hereto a list of good hundred dollar bonds. Any of these are quite safe; but of course the greater safety is to be had by buying only one of each of the bonds selected. It is the old principle of not putting your eggs all in one basket.

About two-thirds of the investment should be put into bonds of this type, and the other third, when prices are low, may well be put into stocks. At, or near, the bottom of a bear market, good stocks with long dividend records are almost as safe as bonds; and they have the advantage that in the succeeding bull market their prices

go up 20 to 50 per cent. The selection, however, must be made carefully, as it is only a very small minority of stocks which can really be considered as safe as a savings bank account in practice. Hence, the qualifications of such stocks may be enumerated.

Only those which are listed on the regular—not curb—exchanges of New York, Boston, Philadelphia, Chicago, Montreal and Toronto should be bought. Those of companies which have made less than five annual reports, giving both an income account and a balance sheet, should be let alone. The stock selected during the last four or five years reported on should show surplus earnings equal to at least 150 per cent. of dividend requirements, and even in the poorest year out of five it should have earned its dividend. The capitalization of the company issuing said stock should not during the past four or five years have increased any more rapidly in percentage than its gross business and net earnings. Stocks which have not paid continuous dividends through at least one severe business depression like that of 1893 or 1907, should not be bought.

It is true that the issues which can meet these stiff requirements are few and far between, but so are the stocks which can safely be held as a substitute for a savings bank account.

Manifestly the time to buy is around the end of a bear movement. But when is this? It is futile to give complicated methods of analysis, since the man unfamiliar with finance could not use them; and therefore a per-

fectly definite course of action must be suggested, and this must err on the side of safety. One who observes the following three rules will either err on the side of safety, or not err at all.

(1) Wait before buying one full year from the date on which the last bull market ended, as indicated by the Wall Street Journal's average of twenty rails, or by the average given in Dun's Review of sixty rails.

(2) Even then do not buy until some of the leading averages of the bond prices have gone off at least $8\frac{3}{4}$ points, and then rallied at least one point, and held above the lowest at least two months.

(3) Even then do not buy unless one of the above averages of railroad stock prices has shrunken since the top of the last bull movement by at least 20 per cent. of itself.

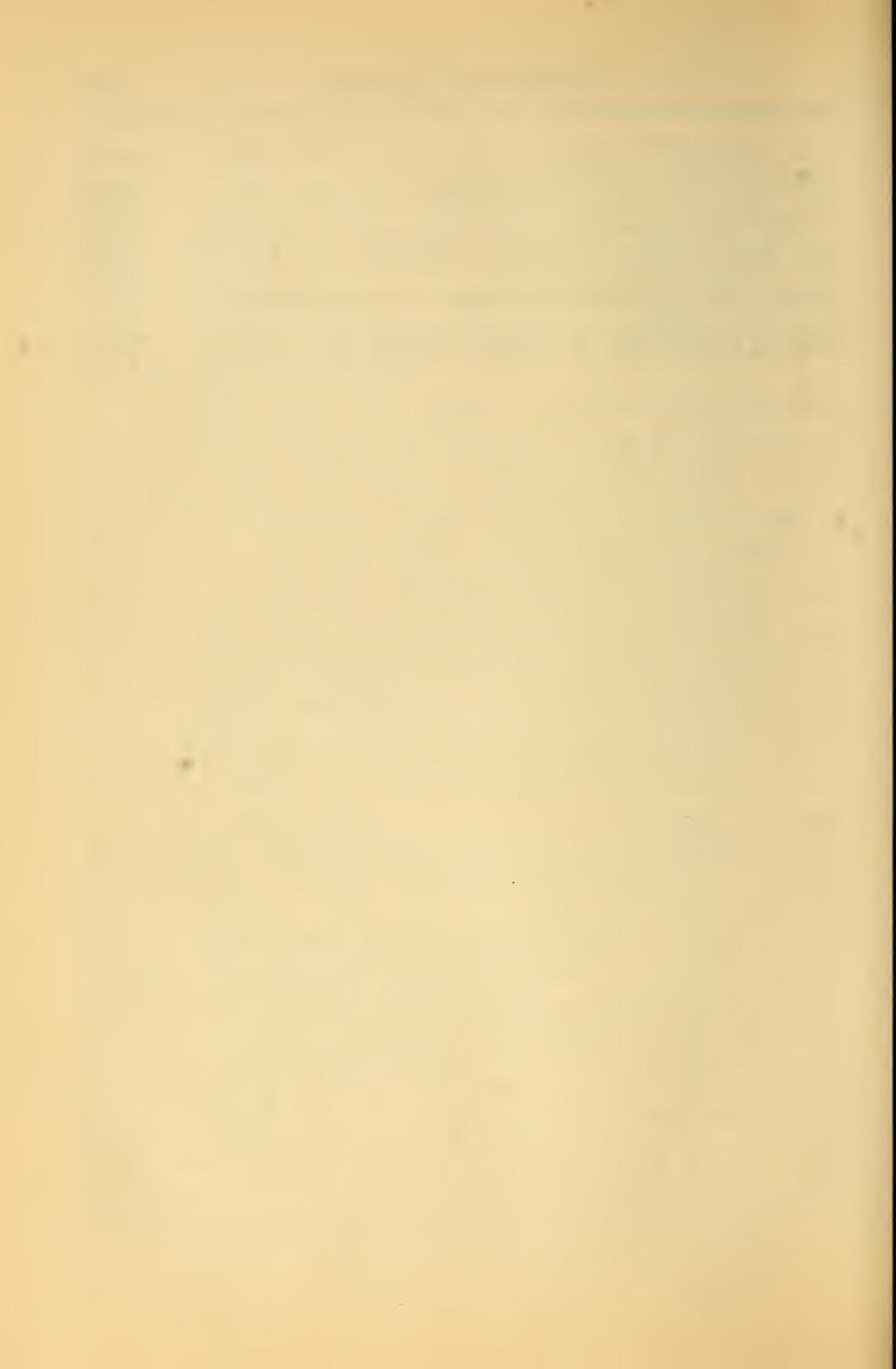
The man who follows these stringent rules will buy the right stocks, and get them at approximately the right time. If he does not know just how to follow them, an adviser such as referred to above can tell him. He is then in a position to wait for a profit of 10 to 30 per cent. on his stocks, and then exchange them into first class bonds. This exchange should be made at the very time when stock prices are booming and labor is fully employed, and everybody is talking prosperity. At such times, when one steps into a brokerage office, he is sure to be advised to buy more stocks instead of selling what he has; but if he sticks to his purpose, and follows a very conservative course of action he will profit

thereby. Still better than exchanging from stocks into bonds, or even from low grade bonds into the very best is the policy of selling out one's security holdings at such a time and put the money in the savings bank, and leave it there throughout the next ensuing bear movement. Especially is this true of an investment fund totalling less than \$1,000.

Difficulties there are indeed; and the chief difficulty is that nine-tenths of small investors lack the will-power and consistency of purpose to stick to such a plan. Taking advice becomes a sort of habit or disease, and a person who will take advice from one man is likely to take it from another. Hence, though he may start out well enough and do the right thing, he is extremely apt to be dissuaded from his original purpose, and be induced to buy worthless or very poor securities from that small and crooked minority of financial houses which so injures the reputation of all the rest.

Good \$100 Bonds	Int.	Due
Anglo-French external loan	5%	1929
American Gas & Electric collateral trust.....	5	2007
City of Baltimore, reg.	4	1951
City of Chicago	4	1927
Chicago, Milwaukee and St. Paul convertible....	4½	1932
Chicago, Milwaukee and St. Paul convertible....	5	2014
Colorado and Southern refdg. and ext.	4½	1935
Cleveland Electric Illuminating Co. 1st mortgage	5	1931
Chicago, Burlington and Quincy ext. coll. tr....	4	1922
Denver Gas and Electric first	5	1949
Diamond Match Co. conv. deb.	6	1920
General Electric	3½	1942
Keokuk and Des Moines 1st mortgage.....	5	1923
Liggett and Myers	7	1944
P. Lorillard	7	1944
Laclede Gas Light Co. 1st mortgage	5	1931

Good \$100 Bonds	Int.	Due
Montana Power 1st and refunding	5	1943
New York Air Brake 1st mortgage	6	1928
Newark Gas Co. first	6	1944
New York Central convertible debenture	6	1935
San Francisco Terminal first	4	1950
Schenectady and Duaneburg first	6	1924
State of Louisiana	5	1929
Western United Gas & Electric 1st and ref.....	5	1950



XXXIX

Investments For Women and Dependents

THIS is the tenth and last of the principal classes of investors whose needs have been discussed in these chapters. Of course the class of people here referred to are not women and dependents who are beneficiaries under trust instruments, but rather those who come into the direct ownership of securities. A competent trustee has the knowledge and the touch with financial conditions to enable him to handle an investment in a somewhat more profitable manner than can be done by a person with less experience and financial skill.

For this class of investors the first and almost the only consideration is safety of principal. They cannot afford to lose, and therefore should not take risks; and the same principle applies to purchases by experienced business men of securities which are to be left to their wives and dependents. Moreover, the rule of "safety first" should be followed very strictly. There are hundreds of bonds or even stocks which under existing business conditions are perfectly safe, but which under the conditions which existed a few years ago, or which may exist a few years hence, would not be safe at all. Hence, one must so far as possible pick out securities of a per-

manent character which are safe under any conditions.

Permanence is not a characteristic of financial matters; and bonds, generally speaking, do not have a permanent status. Many which looked perfectly good a few years ago have now proven to be third or fourth rate investments, while some which were semi-speculative have become first or second class investments. Even the best bonds change their position in accordance with the changing worth of capital. Ten or fifteen years ago new capital was worth 4 per cent. whereas it is now worth 5, and correspondingly the very best bonds have sold down from a 4 per cent. basis to a 5 per cent. basis or thereabouts. These are but two of the many factors which make it difficult to select permanently good and safe investments.

In leaving securities to posterity or dependents there is of course no way to guard against changes in the worth of capital; but other valuable precautions may be taken. Bonds may be selected which have in them the elements of permanent value. These elements are, first, an abundance of physical assets, and second, stability of assets. Assets are like chemical compounds in that some of them are very stable in character, while others dissolve from almost any cause or no cause at all. Good-will is an asset of the latter kind; for in many instances it is extremely valuable, and yet in almost every case it is unstable and its value may disappear almost any moment.

Going still further, assets which are purely physical

vary immensely in the permanence of their values. For instance, farm property is an asset which for hundreds of years has maintained or increased its value; but canal property, generally speaking, is probably not worth 5 per cent. of what it was in 1840. Even among the various kinds of physical assets which are in constant use at present, there is a great difference in permanence of value. Railroad property has about as permanent a value as any, because it is practically certain to retain its usefulness regardless of the fortunes of its present owners. By way of contrast, summer hotel property, even though valued 10 or 20 per cent. below its cost, is quite lacking in permanence of value, because its earning power is apt to be destroyed any moment by loss of popularity.

What not to buy is perhaps just as important a question as what to buy. For women and dependents no stocks whatever should be bought, because they lack permanence of value. They carry no liability except when dividends are guaranteed or cumulative, and even such a liability is in many cases not very binding. Cumulative provisions are easily dodged, and even high grade stocks whose dividends are guaranteed by solid corporations yield no more than bonds, so that there is no advantage in buying them.

There are a great many mill stocks which are first class investments, and not a few which will doubtless remain so for decades; but they should not be bought by or for this class of investors because there is noth-

ing to secure their permanence of value. If that value remains it will be largely a matter of good fortune. A board of directors is not obliged to declare dividends. Bank stocks, broadly speaking, are still better investments, but these also should be avoided for two reasons. First, it requires a special knowledge of bankers and banking; and second, the investment value of even the best of such stocks so continually changes as to require constant watching.

Short term notes should be avoided by these investors for the obvious reasons that funds so handled would have to be frequently re-invested, and that it requires considerable business experience to distinguish safe from unsafe notes. Debenture bonds are disqualified as a rule by the lack of assets behind them, and the same may be said of the great majority of convertibles. Even the small minority of the latter in which the convertible privilege is really valuable are hardly suitable for women and dependents because of the difficulty of knowing just when and how to convert or sell them and reinvest the money.

Hotel bonds and a great many other real estate securities are unsuitable, because their earning power depends so much upon popularity and other rapidly changing conditions. Manufacturing company bonds with exceptions of course, are disqualified by the rapid rate at which manufacturing plants depreciate, and by the instantaneous 30 to 70 per cent. depreciation which takes place in its assets when a manufacturing concern ceases

doing business. Copper mining bonds, and also coal and other mining bonds are unsuitable for women and dependents because of the extreme uncertainty as to ore reserves and underground conditions, and also because of the frequent lack of proper sinking funds and other safeguards which characterizes many such bonds. Irrigation district bonds are also rather unsuitable.

Having observed what to avoid, it is worth noticing what particular classes of bonds are the most likely to show the safety and the permanence of value which are to be desired. In the first place, it is quite futile to try to find permanently safe and sound securities of the type described above which will show a high yield. There are no such. Five per cent. is now almost the exact worth of new capital, in normal times, as proven by the fact that it is the average yield of a very large number of new bond issues made throughout the United States in recent years. Practically speaking, the more one's bonds yield over 5 per cent. the greater is the risk; and the more their yield falls below 5 per cent. the greater are the excesses of the physical assets underlying the bond over and above the market value of the bond.

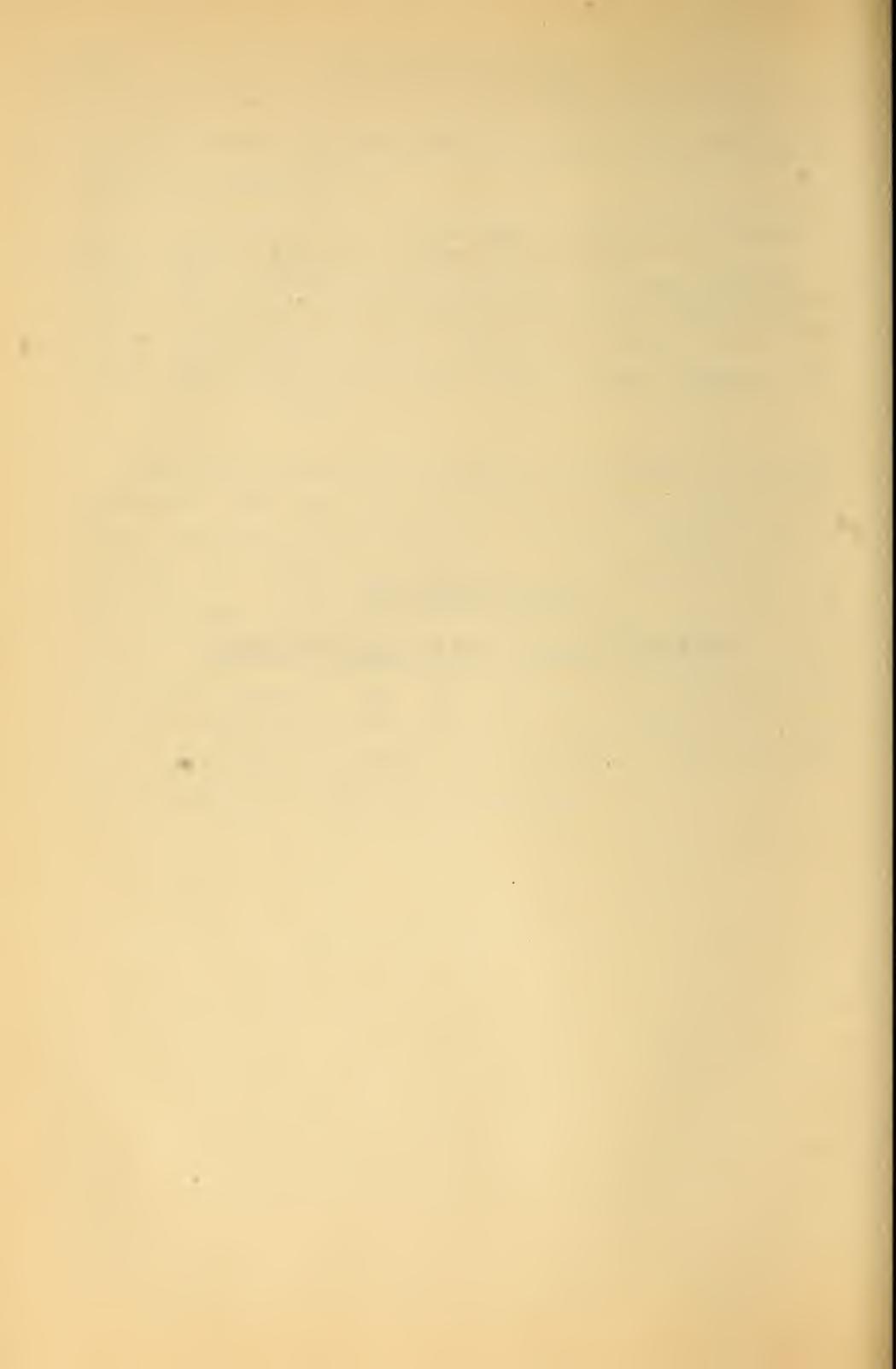
Of course yields vary among absolutely safe and secured bonds. Unappreciated securities sell higher than others. Likewise those representing companies which are operating in localities far distant from the centers of capital are apt to sell low and show high yields. Small and relatively unknown issues of bonds are likely to have such a narrow market as to sell cheap. Consider-

ing all these factors, the following subdivision or diversification is suggested:

5 per cent. in bonds of various states yielding $3\frac{3}{4}$ to $4\frac{3}{4}\%$
25 per cent. in municipals yielding $4\frac{1}{2}$ to $5\frac{1}{2}\%$
10 per cent. in foreign government bonds yielding 4 to $6\frac{1}{4}\%$
25 per cent. in railroad mortgage bonds yielding $4\frac{5}{8}$ to $5\frac{3}{8}\%$
15 per cent. in gas and electric light bonds yielding $4\frac{7}{8}$ to $5\frac{7}{8}\%$
10 per cent. in equipment trusts yielding 5 to 6%
10 per cent. in underlying street railway bonds yielding 5 to $6\frac{5}{8}\%$

If the total fund to be invested is too small to be subdivided in this way, the best bonds to select under ordinary conditions are municipals, railroad mortgage bonds, showing low yields, and foreign government bonds of the stronger nations. Even these issues, in spite of their low yields will pay considerably more than a savings bank account, and will show so little depreciation during a bear movement that they can be held year after year, somewhat regardless of conditions. They require the minimum of study and attention.

SECTION IV
PRACTICAL SUGGESTIONS



XL

Finding the Desired Security

THE investor, having decided upon the kind or type of security he desires, will have more or less difficulty, if unfamiliar with investment matters, in finding just the stock or bond he wants. The ordinary method is to go to one's bank or bond house, or to some stock exchange firm, and accept the advice offered. This method has both its advantages and disadvantages. Banks and stock and bond houses generally are themselves the sellers of goods, or are identified directly or indirectly with the sellers of goods. Their advice, therefore, is unlikely to be absolutely impartial. Even if they themselves have no stocks or bonds to sell, it is customary for them to receive a commission from the bond house on all the business of the customers whom they send to that house. This is a point of very small importance, but it does make a difference between absolute impartiality and moderately biased judgment.

Another disadvantage in this method is that every man is more keenly interested in his own needs and requirements than any adviser whom he can find. With moderately good judgment, then, the larger efforts which he will make to satisfy his own needs will bring better results than the snap judgment which he will

obtain from an adviser. Hence, it usually pays to hunt out one's own stocks and bonds from lists which afford a considerable variety to select from.

Furthermore, it is desirable to divide one's investments between new issues and old seasoned issues, and this is another reason for making one's own selection. Financial houses are naturally and properly much more interested in selling a new issue upon which they receive a commission of one-half of 1 per cent. to 2, 3, or even 4 per cent., than they are in selling an old seasoned bond or stock upon which the commission is only one-eighth of 1 per cent. Still further, the old seasoned issue has an average depreciation much less than the new issue.

It is important, then, for the careful investor to know how and where to find the security which will fit his precise needs. Hence, even though the sources of information on this point may change in time, there are here given some of the best of these sources, as they are at present.

For finding the great majority of stocks and bonds, the Commercial and Financial Chronicle of New York is more than worth the subscription price. It gives not only the daily and weekly quotations of securities listed on the principal exchanges, but also the monthly quotations of street railway, industrial, mining, public utility, municipal and other securities, whether listed or not. Valuable sources from which to obtain both quotations and lists are the Wall Street Journal, the

Saturday evening issue of the New York Sun, the Boston News Bureau, the Boston Commercial and the Annalist, published by the New York Times.

The Wall Street Journal contains excellent lists and quotations of short term notes and public utility stocks, to say nothing of the ordinary stock exchange securities. The Saturday evening edition of the Sun furnishes the current yield of all the leading dividend-paying stocks on the New York exchange. The Boston News Bureau and the Boston Commercial are the best generally available sources of information regarding copper stocks. The Annalist gives not only the general quotations of listed securities, but also those of many unlisted stocks and bonds together with the prices of quite a number of governments, municipal and public utility securities.

Amongst the other valuable helps to the investor, Moody's Magazine from time to time gives lists of One Hundred Dollar bonds, which are particularly helpful to the small investor. The Magazine of Wall Street publishes every two weeks an Investment Digest which contains in brief, pithy paragraphs the news, such as earnings, dividends, etc., regarding scores of different corporations.

For lists of municipal bonds the Commercial and Financial Chronicle is the best source, since the lists are very extensive. Besides this, the State and City supplement of this publication gives information as to the population, wealth and debts of thousands of muni-

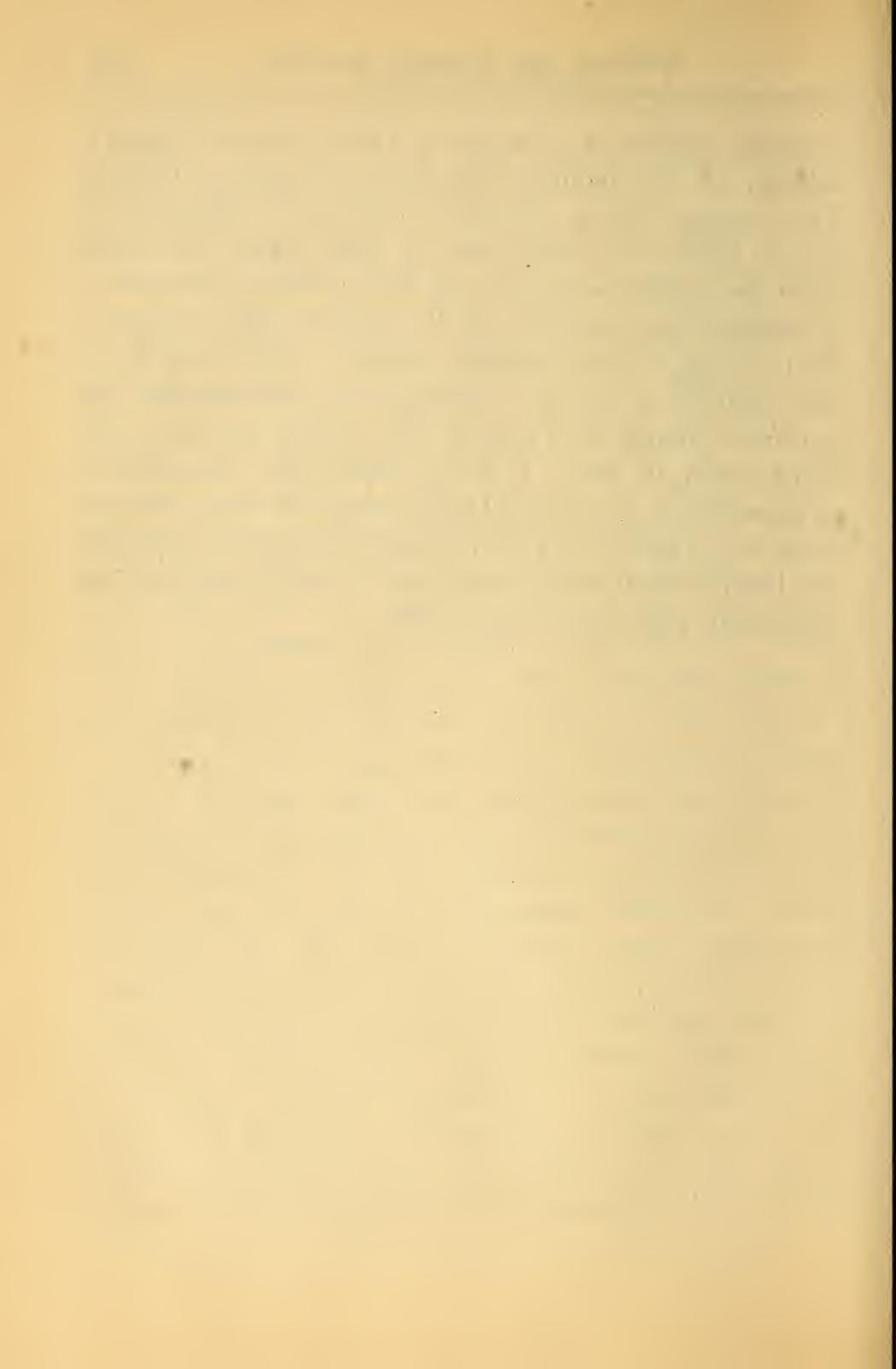
cipalities. By the use of these statistics one can make any desired selection of municipal bonds.

For United States bonds, foreign government bonds, bank stocks and mill stocks, the circulars of bond houses are the best source. Bank stocks are pretty fully quoted in the monthly quotation supplement of the Commercial and Financial Chronicle, but no information is given as to earnings, dividend payments and the like. There are bond houses which specialize in all these groups of stocks and bonds, and their circulars together with their advice are of the greatest assistance in making selections. Stock and bond houses in Boston, Lowell and Fall River can furnish lists together with quotations and general information regarding mill stocks. The Journal of Commerce of New York also occasionally publishes the quotations of many of these stocks.

There are also books which are of the greatest assistance. Among these the best known are Moody's Analyses of Investments, Poor's Manuals and the Copper Handbook. The two former are published in New York, and the latter in Houghton, Michigan. Poor's Manuals give the income accounts, balance sheets and other statistics taken from the annual reports of railroad, industrial, and public utility companies, but furnish no opinions upon their securities. The Copper Handbook does give opinions in a broad and general way; and Moody's Analyses gives opinions upon thousands of standard bonds and stocks in a very definite way. This is accomplished by assigning to each security

a rating, similar in principle to Dun's and Bradstreet's ratings, of the financial standing of business houses. The investor having selected a number of securities to choose from can readily turn to these books and learn from the ratings which are the best stocks and bonds.

Besides these publications, there are scores of others, each having its own peculiar value. This Chapter is not intended at all as a catalogue of publications, but is offered merely as a help to the investor who does not know where to turn. It is of course quite unnecessary to subscribe to all or any large portion of these publications, but a moderate yearly investment in them will pay for itself several times over, even if one's funds do not amount to any more than \$1,000.



XLI

Selection of a Bond House

IN practice it is really more important to the typical investor to select a good bond house than it is to study the various methods of discriminating between good and bad bonds. The investor is primarily a business man engaged in some other line of business, and could never in his spare time become an expert in analyzing bond values; but if he succeeds in choosing the right house he will thereby get the benefit of expert analysis made by men who are both thoroughly qualified and strictly honest. There is perhaps no great business or profession in the world wherein a higher type of honesty prevails than in the stock and bond business; and this is actually true in spite of all the scurrilous attacks that have been made upon Wall Street for a century. Members of legitimate stock exchanges, and bond dealers, habitually make contracts involving large sums of money by word of mouth, and they keep them even in the absence of any binding evidence.

The three things to guard against in selecting a bond house are, in their order, bad judgment, carelessness and bad intentions. By bad judgment is meant failure to estimate correctly the earning power, financial standing and general soundness of an operating company whose

bond is being sold by the bond house. It quite occasionally happens that a house having perfectly good intentions exercises such poor judgment as to involve its clientele in heavy losses. Indeed one or two houses might be mentioned which, in addition to rather poor judgment, have had remarkably bad luck in becoming allied with bond issues which, although appearing perfectly good, were rotten at heart. Carelessness when it occurs usually takes the form of relying too much on some other house. It sometimes occurs that several bond houses join a syndicate and purchase a new bond issue which has not been investigated—each in the belief that one of the other houses has made a thorough investigation.

Although the standard of honesty among bond houses as a class is very high, it is not a matter of course simply because a given house is big, old and well known, that it is therefore reliable. Full page advertisements do not prove reliability; and some houses, like some merchants and manufacturers, have been known to first develop a good reputation and then use the same as a means of selling cheap goods at a high price. The writer recalls the visit of a salesman representing a house which is both very old and very well known, who solemnly asserted and positively insisted that the gross earnings of a company whose bond he was selling were more than four times as large as they actually were. Therefore investigation is really necessary in spite of the high standard of honesty.

Primarily the business of a bond house is to buy an entire issue of bonds and distribute them amongst its customers. It buys wholesale and sells retail. Often-times the operation instead of being conducted by a single house is carried out by a group of houses known as a syndicate. Especially is this true of the many smaller houses, any one of which is too small to purchase outright an entire bond issue amounting to millions of dollars. There are, however, houses which control the properties whose bonds they sell. If the properties are prosperous, as is the case with a well known house which develops and manages street railway concerns and sells their bonds—this is an advantage, since the house is then in possession of absolutely first hand information on every point concerning the properties. But if the properties should meet with any long series of misfortunes, any such house would be tempted to save itself by obtaining the necessary new capital for the properties, and by doing so through over-stating the merits of the new securities issued.

No concern, whether a bond house or a manufacturer of goods, can be both maker and seller without having to meet the temptation to exaggerate the merit of that which it makes and sells. In some instances this combination of two businesses in one has led to serious losses to the investing public; but in others the objection is more theoretic than real. It can be stated, however, that the man who buys bonds of a house in control of the companies issuing the bonds should, before purchasing, make a general study of the earn-

ings, not only of the company into which he is buying, but also of the other companies controlled by the bond house. If he finds them to be prosperous it is a safe inference that the house is not under temptation to misrepresent.

As between large and small houses there is no presumption that the one is better than the other. The large house may offer a larger number of bonds to select from; but on the other hand the small house is often so closely allied with a number of other small houses that it can offer a wide selection. It is allied with them through buying bond issues for joint account; and besides this, if it is regardful of the interests of the customer it will purchase for him from whatever sources it can be obtained a bond suitable to his needs and receive for the service only a nominal commission.

On the other side it should not be overlooked that the small investor is welcomed in the large house. Such concerns employ very large forces, and like banks, are prepared to handle any amount of business in small lots. The great majority, even of the largest banks and trust companies in the United States, are glad to receive small accounts of only a few hundred dollars because these increase operating expenses only in a slight degree and in the aggregate add substantially to net earnings. So it is with the great bond houses. Their equipment is unexcelled, and their forces are so large that even the purchaser of a single \$100 bond can get all the personal attention he may desire.

The real question is not size, but quality or standard. Selecting a bond house is a task no different from that of investigating the credit of an individual. A good way to begin is to make inquiries from the national bank, trust company or savings bank with which one does business. Incidentally it is worth mentioning that a great many bank depositors, through their own fault, do not obtain from their banks even half of the services which the latter are perfectly willing to render. The officials of your bank from cashier up to president—not from paying teller down to office boy—are in a position to know who is reliable and who is not; and as they want to see your account increase they are ready to give you impartial advice. Further than this, the trustee of an estate or anyone who has had long experience in investing money is likely to know which bond houses are worthy of your confidence.

An important point to remember is that it is not the bond house as an institution, but rather its personnel that one must rely upon. A very old house through a change of personnel may become less reliable than its name implies; and a young house if managed by men of experience, ability and integrity may be thoroughly reliable. It is an individual question.

One of the best criterions, and one which is available to all, is the study of bond circulars themselves. To obtain these it is only necessary to write a dozen letters to different houses announcing one's intention to buy some bonds. If, upon examining these circulars,

it is found that a given house is issuing and recommending bonds against a company which is in process of construction or development and is not yet actually showing net earnings, it is wise to resolve at once to do no business with that house. All good bonds at the very date of their issue earn their interest once and a half or twice over and a bond which has not yet begun to earn its interest is not a bond at all. It is merely a stock sold under misrepresentation. This is still true even though it may be a first mortgage on land or concessions, or rights of way which are to be used in building up the proposed company to a point where it can earn money.

About the only exception is the case of a mortgage bond issued against non-earning property such as land or timber, for example, which property is actually salable at a price equivalent to 125 to 150 per cent. of the amount of the bond issue. One must not, however, assume that land, concessions or timber rights necessarily have a real market value equivalent to the valuations given in bond circulars; for as a usual thing the book values given in balance sheets are merely technical and greatly exceed actual market values. As a general average the capitalization of new corporations is equivalent to 175 or 200 per cent. of the actual cost of the physical property owned.

Another feature of bond circulars which should be examined is the character of the statements made regarding a given company. If the circular is full of

details as to gross and net earnings, operating expenses and interest charges, it should command confidence. Especially is this true if these statements of earnings and expenses cover a period of years, and are accompanied by full explanations. But if in the place of these pertinent facts the circular is filled up with a glorification of the industry or the locality in which the given company is engaged, the investor should at once become suspicious. The greatness of a city will not save an overcapitalized or mismanaged street railway company from receivership, nor will the magnificence of a farming district pay the interest on the bond of an irrigation company whose expenses exceed its income.

A third test which may well be applied in judging a bond house by its circulars is to be found in an inspection of the yields offered. In the second chapter of this book it is shown about how much securities of different classes ought to yield in normal times. If a house promises yields much in excess of these figures, and at the same time asserts or guarantees that the security is strictly high grade, this is a sufficient cause for distrust. To take a concrete illustration, the yield of really first class underlying railroad mortgage bonds is from $4\frac{1}{4}$ to $4\frac{3}{4}$ per cent., and seldom exceeds 5 per cent. Possibly it would be safe to say that it never does so. Now if a circular offers what is represented to be an underlying railroad mortgage bond, and offers it on a $5\frac{1}{2}$ or 6 per cent. basis, the house issuing the circular is a good one to let strictly alone.

Much can be learned through personal conversation with representatives of various bond houses, especially if one calls at the offices of the house itself. Bond salesmen, even of the best houses, occasionally indulge in exaggerations and false promises in spite of all the care exercised in avoiding the employment of such salesmen. However, upon making a personal call, if the investor is told by one of the responsible men in the office that the house will guarantee that the price of a given bond or note will never fall below a certain limit, he may know that the house is not to be relied upon. Accidents can happen to any company, however well managed, and it is utterly impossible to honestly hold out any such guarantees.

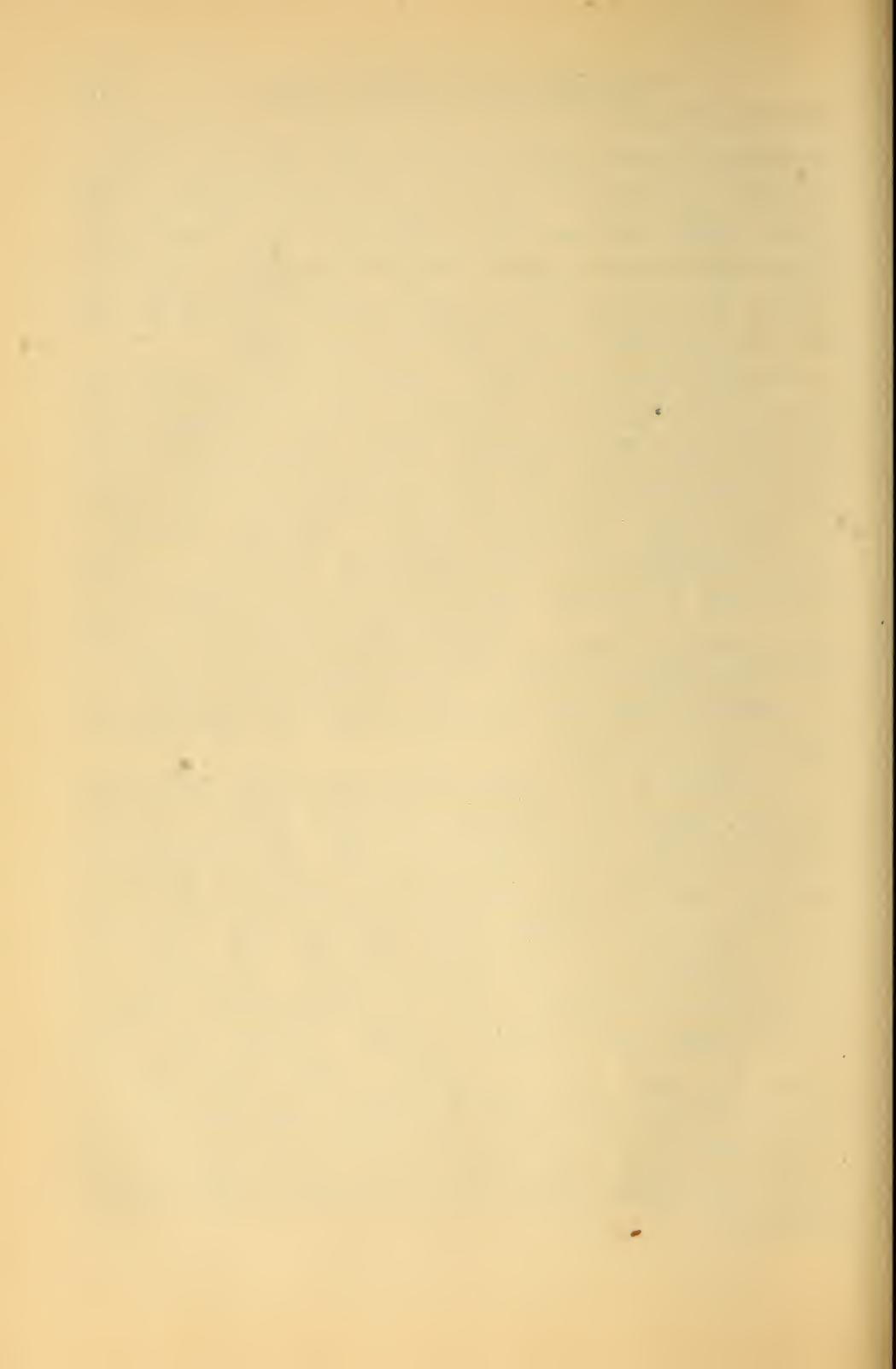
Then too, the attitude of a house toward inquiries as to earnings, assets, etc., is very enlightening. A reliable concern will meet any reasonable question with a frank answer, and will take pains to give all the pertinent facts desired regarding any bond or the company which issues it. Practically all good houses maintain statistical departments for the very purpose of accumulating such information and having it ready at hand. An unreliable concern, on the contrary, is apt to meet such inquiries with a superior air, and bluntly hint that the mere asking of the question is a slur upon the integrity of the house.

Furthermore, a reliable house will be able and willing, except in times of financial stress, to find a market for your bond at only a slight concession from the price at which they would be ready to sell you the same bond.

A concern which merely sells to you, and never assists you when you desire to sell, deserves no confidence. All good houses do quite the contrary. It is not infrequent for a bond house to resell on behalf of its customers an amount of securities equal to 10 to 20 per cent. of its total yearly sales of new issues.

Finally one can, if he so desires, study out the reliability of a house by obtaining a list of its past bond offerings and observing how many of these went wrong. Such lists are published every year and are in the hands of every large investment house. Having obtained a fairly complete list of the important issues of a given house for a number of years past the investor can then consult Moody's Analyses of Investments and find the rating of each bond. If the ratings run high it is a sufficient indication that the house in question deserves his confidence.

It cannot be too emphatically stated that these suggestions imply no disrespect to bond houses, and no reflection upon their integrity. If the standard of honesty were as high among all business men as among bond dealers, we could strike half the laws from the statute books and close half the jails. However, the inexperienced investor, like all inexperienced persons, is the most apt to place his faith in those who hold forth the most golden promises. Thus it is that so many persons have been defrauded, and that the reliable stock and bond houses have not yet received the high appreciation which their usefulness and integrity deserves.



XLII

How and When to Buy and Sell

HOW to buy and sell is generally known; but for the sake of those who are investing in securities for the first time a few points may be mentioned. Investment purchases can readily be made without taking the trouble to go to a stock exchange firm or a bond house. One has only to give the order in writing to his bank, trust company or savings bank; and in due time the certificate will be waiting for him at the bank. If he intends to hold permanently it is wise to have the certificate transferred into his own name, but if his purpose is to hold only for a space of a few months it will be equally satisfactory and less trouble to receive what is called a "street certificate," meaning a certificate which is endorsed in blank.

In both buying and selling one should state the price which he is willing to pay, or else should make his order read "at the market." In the case of listed securities there is no genuine advantage in setting a price, and the purchaser may be sure that any reputable stock exchange or bond house will give him fair treatment if the order is placed at the market. When it comes to speculation the fixing of prices is an entire mistake. When a stock is going up it is a purchase at the market

and it does not matter to the buyer whether he pays a shade more or less than the last quotation; and vice versa when it is going down. It not infrequently happens that a trader who is trying to be close with his money misses a big and exceedingly profitable rise by placing his buying order at somewhat too low a price, and thereby failing to obtain the stock.

The really important subject of this Chapter is the *when*. In order to carry out the investment policies outlined in previous Chapters it is absolutely necessary that one should know with a fair degree of certainty approximately when to sell out unstable securities in preparation for a bear movement, and to repurchase them in anticipation of a bull movement. Contrary to the general impression both of these subjects can be readily and clearly understood through a moderate amount of study of financial and commercial statistics, and without the application of any special knowledge or other skill over and above common sense.

Bull and bear movements are mere reflections of the rise and fall of the general prosperity of the nation. They are perfectly simple in their nature, and it is almost self-evident that an era of increasing prosperity must necessarily be accompanied by a bull movement and vice versa. Stocks and bonds are the most liquid of all assets with the exception of cash, bank deposits and commercial paper. Hence when the business men of the United States, taken as a whole, are in need of money to meet their obligations they are positively certain to become sellers of securities and to thereby

produce a bear movement. On the other hand, when these business men are making money faster than they are spending it they are equally certain to seek a ready means of investing it, to buy securities and to thereby cause a bull movement.

However, it is not the purpose of the writer to discuss the theory of these movements except so far as is necessary to show the basis of the practical conclusions to be drawn. The main purpose is to describe concretely the best methods of knowing when the movements are coming to an end. Now there are several items of statistics which reflect the prosperity of the country with more accuracy than the others, and which therefore may be especially singled out and used in determining these important points. Three of these are: Interest rates, pig iron prices and bond prices. Let us first notice why these reflect the prosperity of the nation accurately, and then observe the practical rules for their use.

Of all the commodities the consumption of which can be curtailed in hard times without thereby suffering from cold or hunger, pig iron is the greatest and most important. It is one of the foremost raw materials entering into all manufactured products; and manufacturing is the greatest industry in the United States next to agriculture. Furthermore, all our industries including agriculture are conducted principally by the use of machinery and mechanical appliances, and all this machinery is made largely from pig iron and its

products. For these reasons prosperity necessarily involves a great increase in pig iron consumption, and depression of business inevitably brings about a substantial decrease. Thus pig iron prices have come to be a barometer, provided only one bears in mind that they keep on rising three to six months after a boom in business reaches top, and keep on declining six to nine months after a depression reaches bottom.

Interest rates are equally certain to reflect the rise and fall of prosperity. Interest is the price paid for the use of capital. When business is expanding every merchant is laying in a larger stock of goods and every producer a larger stock of raw materials. Both are increasing their plants or business outfit and are in need of additional capital. Hence their borrowings increase and the demand for capital increases. So long as prosperity continues to grow this demand for capital keeps on increasing until finally it reaches the point where the business men of the country have borrowed all the liquid capital there is, and there is no more that can be borrowed. These men at such times have laid in large stocks of goods or materials, have large payments to meet, and therefore are seriously in need of additional loans. They need the loans either to avoid being forced to abandon very profitable business or else to protect their own solvency. Thus the competition for capital becomes so keen that interest rates go very high.

But with the supply of liquid capital exhausted busi-

ness cannot keep on expanding. Hence the expansion must stop and with it there stop also the large sales and revenues which merchants and producers relied upon to meet their large payments. At this juncture they are forced to sell their securities to meet the payments, and then occurs a bear movement. Goods are sacrificed, clerks and laborers not absolutely needed are discharged from employment, and the debt paying process begins. For a time it is a wild and universal scramble to get money fast enough to keep out of bankruptcy. Then as Peter pays Paul, and Paul pays Saul, and Saul pays Peter and Peter pays Paul, this round robin of payments gradually liquidates the indebtedness of the business men of the nation; and the creditors find their money piling up in the banks. The curtailment was originally forced by the exhaustion of liquid capital, and that in turn forced everyone to pay debts or fail, and that in turn so reduced the volume of general business as to kill the demand for liquid capital. The accumulation of money in the banks and of funds in the hands of lenders forces interest rates very low at such times, and then securities are a purchase.

Bond prices carefully studied and taking an average of twenty or thirty representative mortgage bonds rather than a lesser number, are as valuable as pig iron or interest rates in reaching conclusions. At the top of a boom in business margins of profit are very wide, and the typical business man discovers that he can make

two or three per cent. more by employing his capital in his own business than he can by holding bonds. Thus it comes about that he sells his bonds, and this causes the bond market to decline right in the midst of the greatest general prosperity and several months before the stock market begins to decline. On the other hand, in the midst of a business depression the same business man finds that he has a surplus of idle funds which he cannot put to use because of the smallness of his volume of business or sales. Hence he invests these funds in bonds to obtain a return on them, and he does this some weeks or months before the situation is such as to give him the courage to invest in stocks. Thus the bond market shows decided strength slightly in advance of the stock market. Furthermore, bonds are so much more stable in their values that the interpretation of their price movements is not very liable to error.

In addition to these three barometers of prosperity, the investor may judge the top of a bull market by the evidences of distribution of securities on the part of the largest holders. He may also judge the approximate bottom of a bear movement by the evidences of accumulation on the part of these men. These evidences are less certain of interpretation than the movements of pig iron, interest rates and bonds, and should not be used alone. Having briefly noticed these fundamental principles, we may now come to the concrete definitions of the time to buy and the time to sell.

THE TIME TO BUY

Pig Iron: In using pig iron as a barometer it is necessary to keep a monthly record of prices and this record should be the average of the quotations given in some weekly publication such as Dun's or Bradstreet's Reviews or the Iron Age. Dun, for example, quotes four different grades of pig iron every week, and if the entire four are taken as a basis the monthly average price based upon 16 to 20 quotations will prove very accurate.

Counting from the highest monthly average price of pig iron made after the termination of a bull movement in stocks, it is time to buy securities after these monthly averages for iron have declined for a space of six months and to the amount of not less than \$3 per ton; provided however, general liquidation must have meanwhile been indicated either by a drop of 30 points in some average of 20 or 30 stocks, or else by a drop of as much as \$5 in pig iron; and provided also this general liquidation must have been further indicated by a continued decline from the aforesaid highest monthly average price, lasting at least seven months without a rally of as much as \$1.00.

Interest Rates: After the end of a bull movement in stocks when the monthly average of New York interest rates drops below $3\frac{1}{4}$ per cent. it is time to buy securities; provided however, general liquidation must have been indicated by a decline of \$5 per ton in pig iron, or of $8\frac{1}{2}$ points in bonds since the date of the

extreme top of the bull market in stocks, or of 30 points in the average price of active stocks. This general average of interest rates should be based one-fourth on call money and acceptances, one-fourth on 30 to 90 day money, one-fourth on four to six months money, and one-fourth on prime commercial paper. These quotations can readily be obtained each week from such publications as Bradstreet's Review or the Commercial and Financial Chronicle. The method of averaging should be to add together each week the highest and lowest rates for call money and acceptances and divide these four prices by four. Then obtain the average or middle prices of the other three maturities here mentioned, and add the four together and divide by four. Thus is obtained the weekly average and the monthly average is obtained from the weekly figures.

Bond Prices: Counting from the month during which a bull market in stocks makes its extreme high point—when thereafter the monthly average price of 20 or 30 representative bonds has declined as much as $8\frac{1}{2}$ points, and has rallied from the low level as much as two months in time, and one point in amount, it is then time to buy securities. These averages of bond prices should be based upon the quotations of each week within the month. Averages such as those published by the Boston Commercial and a number of other papers are serviceable, or one can readily compile his own average.

Accumulation: This word means the passing of

securities and especially stocks, into strong hands; and accumulation is indicated by a long lingering of stock prices at low levels, by their refusal to sink to new low levels in spite of great pessimism, and by the failure of all bullish manipulation. Averages of 20 to 40 active stocks must here be used as a guide, and must be tabulated or charted every day. To allow time for the completion of liquidation in securities these averages must remain near the low level and must come back after a rally of three points or more to within \$6 of the extreme bottom, and must do this at least four months after the date when the approximate bottom was first reached. The average monthly volume of trading on the New York Exchange during the four or five months beginning with the next month after the approximate bottom was first reached, and ending with the last month wherein prices came back within six points of this approximate bottom, must be less than 13,000,000 shares. This evidence is needed to indicate that the liquidation is exhausted, for a large volume of trading always betokens a large amount of undigested securities in the hands of the public. In spite of all the pessimism these price averages for at least four months must fail to sink more than two or three points below the first approximate bottom or low level.

THE TIME TO SELL

Pig Iron: After a bull movement of 30 points or more in the above average of stock prices, and after

pig iron prices have risen at least seven months and \$4, it is time to sell whenever the monthly average price of pig iron remains at the same figure or within 15 cents thereof for the space of three months. Without waiting for the averages to do this, it is time to sell securities after these monthly average prices of pig iron have risen more than \$10 from the lowest of the previous bear movements in iron. In other words, such a rise in pig iron reflects so great an increase in the general prosperity that any further substantial increase is very unlikely. Hence it is that stock prices are not likely to go much if any higher, and that it is time to sell unstable securities in preparation for a bear movement.

Interest Rates: Whenever the monthly averages of New York interest rates as defined above rise above 5.8 per cent., and stay there for two months—meaning two in all and not three—it is time to sell securities. However, some bear movements are not foreshadowed by such a rise in interest rates. This is true, for example, of that of 1910. The boom of 1909 consisted largely of fictitious prosperity rather than genuine well being, and was brought about by an era of extravagance rather than of large profits and universal employment. Hence several of these indications should be used together instead of using any one of them singly.

Bond Prices: When the above defined monthly averages of bond prices have sagged as long as three months, and at least $1\frac{1}{2}$ points in face of a very strong

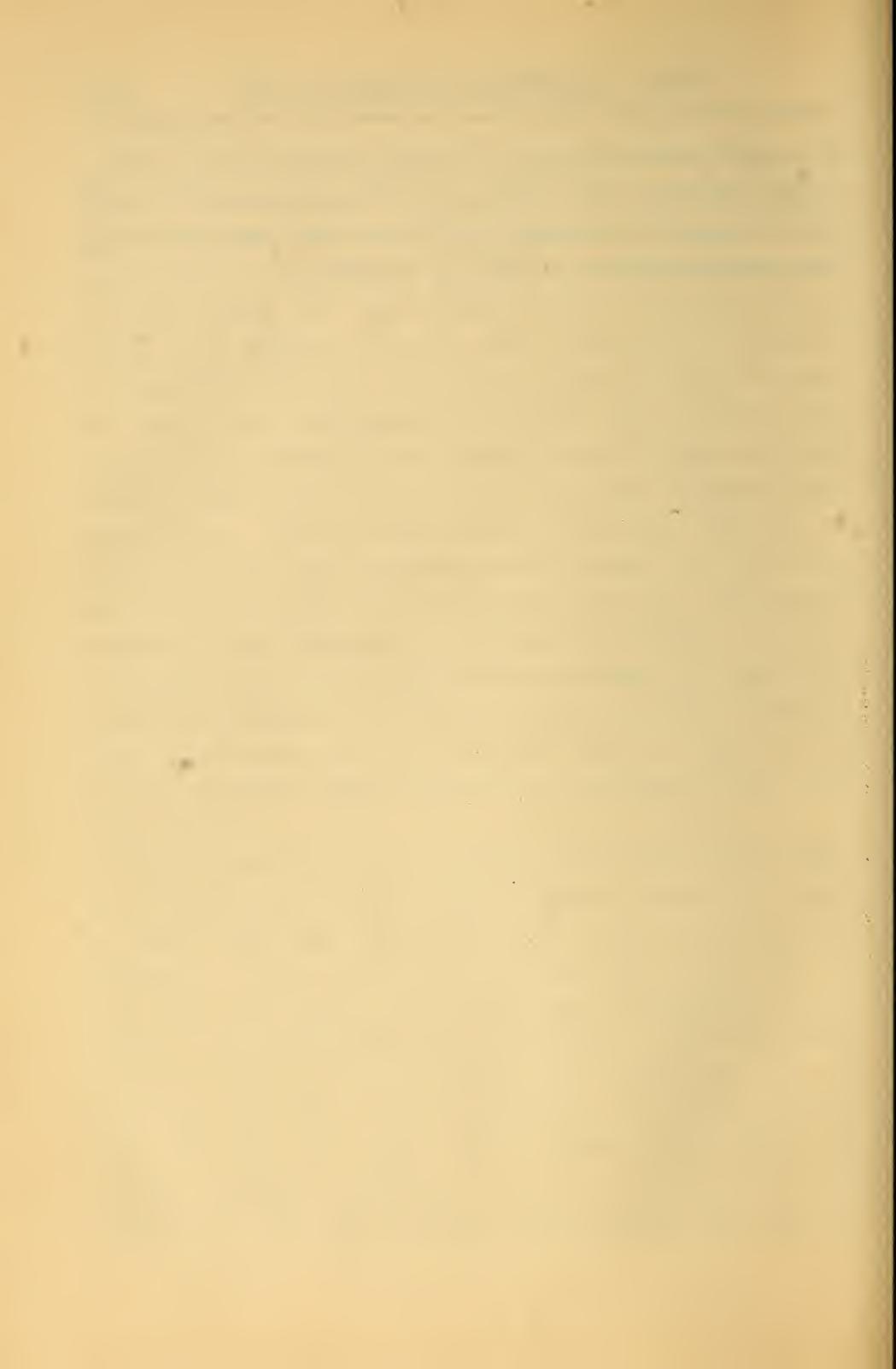
and active stock market and a boom in general business, it is time to sell unstable securities. The underlying principle of this generalization has already been noted.

Distribution: Distribution means realizing by the wealthiest of security holders, especially in stocks. It is indicated by failure of the stock market to make much net advance in spite of enormous activity and the wildest optimism. The investing public is always unduly impressed with large share transactions, and therefore when insiders want to sell out they make the market very active. For this reason during the four or more months when prices are at the top or are constantly returning to within five points of the top, the average monthly sales on the New York exchange must surely exceed 16,000,000 shares and probably 20,000,000 shares. The stock price averages after having first reached the approximate high level, and after having reached \$3 therefrom, must fail for at least three consecutive months to get above that level by as much as three points. After having declined at least once from the highest level by as much as three points, the average must return at least once within five points of the highest level. During all this time the newspapers, magazines and brokers' circulars will be characterized by the greatest optimism, our foremost men in finance and industry will give no end of bullish interviews and prophecies and the man who thinks that stocks or junior bonds are at all likely to decline will be laughed at as if he were a fool. Such are the evidences of inside distribution. It is then time to sell.

These generalizations have purposely been stated in rather arbitrary and academic language. Precise limits have been set not because they are sure to be correct guides in the future, but because they have been correct guides during the past twenty years. Probably these limits and definitions will make good in the future; but whether they do or not it is better in this Chapter to make the statements so concrete and definite that anyone can interpret them, than to make them so broad and general as to render their practical interpretation impossible. The Delphic oracle was never wrong because it never said anything which could not have two or three meanings; and the great majority of financial writings have followed the illustrious Delphic example. However, the writer would rather assume the small risk that these methods of interpreting financial statistics may sometime make an isolated failure, than to set forth ambiguous generalizations of no value to the practical man.

To be sure this interpretation cannot be made without work and trouble. The investor, to use it, must at least take the pains to keep weekly and monthly averages of the prices of pig iron and bonds and of the rates for money. He may also advantageously obtain or keep averages of stock prices. All this takes time on the part of himself or his employes; but no one has yet discovered a method of making money without labor or pains. By following the policy of selling unstable securities around the top of a bull movement and repurchasing them around the bottom

of a bear movement, the investor will not only enormously increase the safety of his principal, but will also increase his average yield by a very large amount. The profit should be worth the trouble.



XLIII

The Question of Yield

HOW high a yield the investor should expect is often an important question. Especially is this true of those not long experienced in making investments, and of those who have had the misfortune to read the literature of irresponsible financial houses, and have thereby obtained the impression that very large returns may be secured with practically no risk. For these reasons there is here given first, the yields which good securities of various classes may reasonably be expected to show, when purchased around the approximate bottom of a bear movement; and second, those which they may be expected to show if bought around the top of a bull movement.

Security	At Low Level	At High Level
United States government bonds.....	2 to 5 $\frac{3}{8}$	1 $\frac{3}{4}$ to 3
State bonds	3 $\frac{1}{2}$ to 4 $\frac{5}{8}$	3 $\frac{1}{4}$ to 4 $\frac{1}{4}$
Foreign government bonds	4 to 6 $\frac{1}{8}$	3 $\frac{3}{4}$ to 5 $\frac{1}{4}$
Municipal bonds	4 $\frac{1}{2}$ to 5 $\frac{1}{2}$	4 to 4 $\frac{3}{4}$
Railroad mortgage bonds	4 $\frac{5}{8}$ to 5 $\frac{3}{8}$	4 $\frac{1}{8}$ to 4 $\frac{3}{4}$
Gas and Electric Light Co. bonds..	4 $\frac{7}{8}$ to 5 $\frac{7}{8}$	4 $\frac{3}{8}$ to 5 $\frac{3}{8}$
Equipment trusts	5 to 6	4 $\frac{3}{8}$ to 5
Street railway bonds	5 to 6 $\frac{3}{8}$	4 $\frac{1}{2}$ to 5 $\frac{3}{4}$
Steel and Iron company bonds.....	5 $\frac{1}{4}$ to 6 $\frac{3}{4}$	4 $\frac{1}{2}$ to 5 $\frac{1}{2}$
Short Term notes	5 $\frac{5}{8}$ to 6 $\frac{3}{4}$	4 $\frac{3}{4}$ to 6
Bank stocks	4 to 4 $\frac{3}{4}$	3 $\frac{1}{2}$ to 4 $\frac{1}{4}$
Railroad junior bonds	4 $\frac{3}{4}$ to 6 $\frac{1}{2}$	4 $\frac{1}{4}$ to 5 $\frac{1}{2}$
Convertible bonds	4 $\frac{3}{8}$ to 5 $\frac{1}{2}$	4 $\frac{1}{4}$ to 5
Equipment m'f'g company bonds....	5 to 6 $\frac{1}{4}$	4 $\frac{1}{2}$ to 5 $\frac{3}{4}$
Manufacturing company bonds.....	6 to 7	5 $\frac{3}{4}$ to 6 $\frac{3}{4}$

Security	At Low Level	At High Level
Copper company bonds	6 to $7\frac{1}{4}$	3 to $5\frac{1}{4}$
Coal company bonds	5 to $6\frac{3}{4}$	$4\frac{1}{2}$ to $5\frac{1}{2}$
Light and Power preferred stocks	$5\frac{3}{4}$ to 7	5 to 6
Railroad preferred stocks	$5\frac{1}{2}$ to $6\frac{3}{4}$	$4\frac{5}{8}$ to $5\frac{3}{4}$
Street railway preferred stocks	6 to 7	$4\frac{3}{4}$ to 6
Industrial preferred stocks	$6\frac{1}{4}$ to $7\frac{1}{4}$	5 to $6\frac{3}{8}$
Mill stocks	5 to 6	$4\frac{3}{8}$ to $5\frac{1}{4}$
Railroad common stocks	$6\frac{1}{4}$ to $7\frac{1}{4}$	$5\frac{1}{4}$ to $6\frac{1}{2}$
Industrial common stocks	$6\frac{1}{2}$ to $7\frac{1}{2}$	$5\frac{3}{8}$ to $6\frac{1}{4}$
Copper company stocks	$6\frac{1}{2}$ to $8\frac{1}{4}$	6 to 8

These figures are of course mere approximates. Changes are continually taking place not only in the price of capital itself, but also in the character and investment position of various classes of securities. For illustration: It is here assumed that good light and power company preferred stock may be bought in a bear movement at prices which will show a return of $5\frac{3}{4}$ to 7 per cent. on the investment. Really first class seasoned securities do not usually show such returns, but light and power company stocks are not seasoned.

The public utility companies are the most youthful of any large class of companies in the United States. As a general rule their preferred stocks have not yet acquired a fixed status either in the architecture of the company or in the estimation of investors. That is, many of these preferred stocks are issued by holding companies, and have behind them assets which have not yet developed stable value. These assets consist of the stocks and the properties of rapidly growing subsidiaries. But if during the next few years these

companies keep on progressing, and the subsidiaries keep on consolidating with the parent concerns, the position of the stocks will become entirely changed. It will then become quite impossible to buy good stocks of this class, even in a bear market, that will yield much over 6 per cent.

The question of yield in a final analysis must always be an individual question. It cannot be stated positively that all yields over a specified figure denote bad investments. However, in deciding this question the investor is greatly helped by continually bearing in mind the following general principles as to yields.

Five per cent. may be taken as the genuine price of capital, and anything one receives over 5 per cent. may be regarded as payment for the risk he assumes; while anything he receives under 5 per cent. may likewise be regarded as the premium upon the credit of the borrower. Otherwise expressed, 5 per cent. is the proper interest payment to the man who lends to a corporation whose credit is sufficiently high so that there is practically no risk of principal. A 5 per cent. return ought to bring the investor a security which is about as safe as an account in a typical bank, trust company or savings bank.

In the case of a 6 per cent. return, the investor should consider that he receives 5 per cent. for the use of his money and 1 per cent. for the risk he assumes; and in the case of a 4 per cent. return, he should consider that he receives 5 per cent. for the use of his

money, but gives back to the creditor corporation the 1 per cent. in return for a sort of an absolute guarantee that there shall never be any loss of principal. Of course he does not in fact receive the 5 per cent. and give back the 1 per cent., but this is an intelligible way of looking at the matter. Furthermore the general principles as here stated will prevent the thoughtful investor a great many times from purchasing dangerous or positively bad securities because of their high returns. In yields, as in everything else, something for nothing is not to be obtained.

XLIV

Uses of Securities

THE ordinary uses of securities are understood by nearly everyone. These uses are to hold as investments; to hold temporarily as a speculation; to hold as a cash equivalent or a reserve fund; to leave to posterity or to institutions; to hold as a substitute for a savings bank account, and to hold temporarily as a means of offsetting the average depreciation in bonds. What classes of securities to use for all these various purposes are indicated in the following tabulation:

<i>(A) Cash Equivalent or Reserve against Trouble or Stress</i>	
United States Government bonds	Gas & Electric Light Mortgage bonds
State bonds	Equipment Trusts of stronger roads
Best Foreign Government bonds	Underlying Street Railway bonds
Best Municipal bonds	
Genuine Railroad Mortgage bonds	

(B) Permanent Investments but not Cash Equivalent

High Yield Foreign Government bonds	Street Railway bonds
High Yield Municipal bonds	Steel and Iron Company bonds
Railroad Second Mortgage bonds	Best Short Term Notes
Good Gas & Electric Light bonds (which are not first mortgages)	Railroad Junior bonds
Equipment Trusts of weak Roads	Equipment Manufacturing Co. bonds
	Best Manufacturing Company bonds

(C) Temporary Investments to hold for High Yield or Profit

Junior St. Ry. & Gas & Elec. Co. bonds	Manufacturing & Industrial Co. bonds
Second Grade Steel and Iron Co. bonds	Copper Mining bonds
Second Grade Short Term Notes	Coal Company bonds
More Promising Bank Stocks	Best Preferred Stocks of all classes
Railroad Debentures & Con- vertibles	Best Mill Stocks
	Very Best Railroad Common Stocks

**(D) Profit-Making Investments to hold Only During Bull
Movements**

Any Bonds yielding over 6%	Any except very best pre- ferred stocks of all classes
Any Stocks yielding over 7%	
Manufacturing Company bonds	Any Mill & Railroad common stocks except very best
Copper Mining Bonds	
Dividend-paying Industrials & Coppers	

(E) Pure Speculations to hold Only for an Advance in Price

Any and all bonds yielding over 6%	All Copper stocks
Any and all stocks yielding over 7½%	Majority of Gas, Elec. Lt., Power and St. Ry. com- mon stocks
All Bonds and Notes in de- fault	Vast Majority of Industrial common stocks

All the investment principles and ideas contained in this Chapter may be garnered from the previous Chapters of the Book, but for the service of busy men who have no time to read they are here gathered together in brief form. The purpose of this Chapter is to show in the shortest possible space the best uses of all ^{to} the leading classes of securities. As a substitute for investments in real estate the first three classes,

and sometimes the fourth, may be bought and held with good success. As a broad general rule, real estate which yields as much as bonds is not so safe. Furthermore, its holder is subject to taxation and to all sorts of charges, whereas the holder of many securities is free from taxation to a very great extent.

As a cash equivalent or reserve fund against times of stress and trouble Class A of these securities is excellent. The securities belonging to this class can readily be used in obtaining loans even in times of panic. The holder need never dispose of them, and need never have any trouble in borrowing on them. If he holds real estate or some other form of property in a time of panic, it would be practically impossible to negotiate a mortgage, but such high grade collateral as Class A can be taken to any strong bank and used as collateral for a loan in a very few minutes. This class of securities, then, is a sort of cash equivalent, and can be used at all times as a substitute for cash—whereas it has the advantage of yielding 4 per cent. or more, while the cash itself or its equivalent in bank deposits yield only 2 or 3 per cent. unless it be a small savings account.

Classes C and D of these securities are extremely useful for offsetting the depreciation in bonds. All bonds, taken together, show a substantial average depreciation. Since 1905 the average price of 25 high grade mortgage bonds has declined from 99 to 82; and even before the war started the average price was only 85. The investment lists of practically all banks,

trust companies, corporations, institutions and estates show depreciation equal to or greater than that here indicated. Hence it is very desirable toward the close of bear movements in stocks to purchase such securities as Classes C and D to hold temporarily as a means of making profit enough to offset this depreciation. To hold them permanently, however, merely makes the depreciation greater.

For speculation Classes D and E are the most useful, and the latter should be used for speculation only. Those who cannot interpret from actual statistics with approximate correctness enough to buy when prices are below average, and those who are not mentally independent of the whirl of speculative sentiment in times of great prosperity, should never buy any of the securities mentioned in Class E. This whirls leads only to a fool's paradise and to heavy losses, and it does require independence of judgment to sell out right in the midst of such a boom as always marks the top of a bull market. Everyone must be his own judge as to whether or not he has the amount of judgment to enable him to successfully handle these speculative bonds and stocks.

XLV

Anatomy of Annual Reports

FREQUENT references have been made in these Chapters to the showing which should be made by a railroad, industrial or public utility company, in order to render its bonds attractive. It has been mentioned, for example, that the margin of safety should not be too narrow; and to understand what is meant by margin of safety one must have some knowledge of corporation reports. Moreover, in these days when there is such a considerable minority of companies which make up their reports in unusual forms, seemingly for the purpose of making them appear better than they really are, this knowledge, though elementary, must be exact and discriminating. Volumes have been written on the subject, but it is surely worth the while of almost any investor who has not already familiarized himself with it to read a short summary.

Hence there is here given a generalized form of income account and balance sheet which applies to any corporation. The particular names of many of the items of course vary according as the given company is a railroad, street railway, public utility, manufacturing or telephone company. Nevertheless, the items which all should show have a fundamental similarity,

and to understand one is to understand all sufficiently for the purposes of an investor. The numbers here given refer to numbers in the following comments, and in each case the attempt is made to define the item and give a brief statement of its significance, especially as related to the buyer of stocks and bonds.

ANATOMY OF A CORPORATION REPORT

INCOME ACCOUNT

1. Gross earnings or income:
 2. Subdivision of same by sources:
 - Railways: Freight, passenger and others
 - Industrials: By products sold
 - Public Utilities: Transportation, power and light
3. Operating expenses:
 4. Subdivision by purposes of outlay:
 - Railways: Maintenance, transportation, etc.
 - Industrials: Maintenance, depreciation and producing costs
5. Net operating income:
 6. Other income:
 - From investments
 - From various sources
7. Total net income
8. Fixed charges:
 9. Interest on funded and other debts
 10. Taxes
 11. Payments to sinking, depreciation and other funds
12. Surplus for dividends:
 13. Dividends paid
14. Appropriation for construction or improvements
15. Surplus carried forward

BALANCE SHEET

ASSETS

16. Property account:
 17. Physical property such as road equipment or plants
 18. Franchises, patents, good-will, etc.
 19. Securities owned.
20. Current assets:
 21. Bills and accounts receivable
 22. Materials, supplies and unsold goods
 23. Cash and call loans
 24. Marketable (uncapitalized) securities
25. Other and miscellaneous assets:
 26. Advance payments and advances to subsidiaries
 27. Cash and securities in sinking and other funds
 28. Deferred debit items

LIABILITIES

29. Capitalization:
 30. Common stock
 31. Preferred stock
 32. Funded debt
 33. Securities of subsidiaries in hands of public
34. Current liabilities:
 35. Bills and accounts payable
 36. Unpaid taxes, interest, vouchers, wages or dividends
 37. Accrued taxes, interest or dividends not due
 38. Temporary loans.
39. Liabilities of company to its owners:
 40. Reserves for depreciation, insurance, pensions, damages, etc.
 41. Appropriated surplus for improvements, construction and property
 42. Undivided surplus
1. "Gross income" is useful in showing the growth of the given concern; and variations in gross, especially

in times of depression, give an idea as to the relative stability of earnings. Other things being equal, the company which shows the most rapid and steady increase in gross income is in the strongest position.

2. In the case of railways the principal subdivisions of gross earnings are freight and passenger earnings; and except for companies receiving unusually high passenger fares, the smaller the percentage of passenger earnings the better off the company is, because the freight business is the more profitable. Industrial companies seldom report the sources of their gross income, but some of them, like the Steel Corporation, state the products sold; and to one who knows something of the margin of profit in these various products such statements are valuable. With public utilities gross income from the sale of power and light is more valuable than that from the sale of transportation, since it costs less to operate lighting and power plants than to operate transportation properties. Power and lighting plants, as a usual thing, may safely be capitalized at nearly six times their yearly gross income, whereas transportation properties should ordinarily not be capitalized for more than five times their yearly gross.

3. "Operating expenses" generally tend to display efficiency of management and variations in the margin of profit. These points are brought out by finding the percentages of expenses to gross earnings, and comparing them over a series of years. However, it should be borne in mind that expenses per unit of quantity

of business done are the lowest when the quantity of business is normal, and that they tend to rise rapidly when business falls below normal, and to rise slowly when business increases above normal. Variations from these tendencies are not encouraging.

4. The principal items of railway expenses are maintenance of way, equipment and structures, and conducting transportation. Large outlays for the former tend to benefit the property by more than making good the wear and tear; but large outlays for the latter are indications of inefficiency or ill fortune, since money spent for transportation goes into wages, fuel and the like, and is utterly consumed so far as the road is concerned. In determining whether or not a given company spends enough on maintenance, the best off-hand method is to compare the total maintenance with the total volume of traffic, obtaining a ratio between the two; and then compare this ratio with that of other standard roads having a similar kind of traffic. If maintenance expenses per mile of road are used in forming a judgment comparisons must be made only between roads having a similar traffic and a similar density of traffic.

Industrial companies' expenses consist principally of producing costs and of maintenance and depreciation. Most such companies state their expenses in very poor form, so that the investor has to be guided less by their annual reports and more by the personnel of the management. A properly managed industrial concern

not only spends enough for maintenance to keep its physical properties in repair, but also pays into a depreciation fund out of earnings each year enough additional to fully cover that depreciation which has occurred during the year, but which has not necessitated repairs.

5. "Net operating income" is the income from the productive or commercial business of the company, as distinguished from its income from investments and miscellaneous sources. It is obtained by deducting operating expenses from gross earnings, and the percentage of this net income to gross earnings should represent the gross margin of profit.

6. "Other income" is principally from investments, and these investments usually are not pure investments owned for their yield, but represent the interests of the parent company in its affiliated or subsidiary companies.

7. "Total net income" is the sum of operating and other income; but in some cases this so-called total does not really include the entire income. Quite a number of subsidiary companies pay to their parent concerns only their regular dividends or rentals, and retain their undivided surpluses in their own treasuries.

8. "Fixed charges" include all expenses other than operating expenses. They consist principally of taxes, interest on the funded and other debts, and payments into sinking, depreciation and reserve funds.

9. The principal significance of interest payments is their relation to the funded and other debts of the company. By finding the percentage one may learn approximately what average rate of interest the concern is paying for its borrowed capital.

11. "Payments into sinking, depreciation and other reserve funds" are seldom stated clearly; and such statements as are given are usually so incomplete and indefinite that it is dangerous to draw conclusions from them.

12. The "surplus for dividends" is the total net income, minus the fixed charges. In scrutinizing it the points to make sure of are: First, that maintenance and repairs have been properly attended to; second, that depreciation charges have been sufficient to cover the actual deterioration; and third, that other income includes the entire undivided surpluses of the subsidiaries. Sometimes, too, a company omits to charge its entire interest against earnings, and carries a portion in the balance sheet as a liability.

14. "Appropriations for construction, property purchases and improvements" are properly made out of that portion of the surplus earnings which remains after the payment of dividends. However, they are sometimes improperly added into fixed charges,—though it should not be forgotten that they may be so added in with propriety when they represent a sort of depreciation charge.

15. What remains after such appropriations is the final "surplus to be carried forward" and added to the "undivided surplus," which is Item 42. If this undivided surplus is genuine, any increase in it will usually be accompanied by a corresponding gain in the excess of current assets over current liabilities.

16. Coming now to the balance sheet, the "property account" should include all the tangible property owned which is of a permanent form.

17. The term "physical property" explains itself, but bookkeeping items covering it are very deceptive. It is a common practice to greatly overvalue plants and equipment, and in some cases the overvaluation runs from one to two or three hundred per cent. Where the approximate true value of physical property can be obtained, it is significant to find the percentage of maintenance and depreciation charges to the same; for this percentage then shows whether the properties are being maintained without deterioration.

18. Some companies, instead of inflating the physical property valuation, offset the water in their capital stock by marking up the book values of franchises, patents, good-will, etc., enough to match it. In estimating the value of the stock, this intangible property may practically be regarded as worthless, except where the franchises confer actual monopoly privileges. Even valuable patents frequently fail to cause the bonds and stocks of a company to sell for an aggregate price over

and above what they are worth upon the basis of assets and earning power.

19. "Securities owned" are very often immensely overvalued, and sometimes represent nothing more than separately incorporated branches of the business which at the moment are so uncertain that the parent company prefers not to assume their liabilities.

20. "Current assets" are "current." That is to say, they are assets whose form is constantly changing in the natural course of business and the excess of these over current liabilities represents the company's net working capital. The principal items in current assets were mentioned in Number 20 in the form herewith presented.

21. "Bills and accounts receivable" are usually to be accepted at their face value, but in the case of a holding company which does not give the consolidated balance sheets, its accounts receivable may include amounts due from its subsidiaries. Such accounts are valueless unless the subsidiaries are rich enough in net current assets to be able to turn the money over to the parent concern. Otherwise, it is simply a case of one pocket owing the other.

22. "Materials and supplies" as given in balance sheets involve ambiguity, unless the reports state at what price they were inventoried. They should be inventoried at cost, provided the cost does not exceed the current market value. It sometimes occurs that

supplies are not worth their face value because of the heavy depreciation which has not been charged off.

23. "Cash" is always to be taken at its face value with all reputable companies. But few companies have outstanding any call loans and those which do are usually rich concerns so that these loans generally include no inflation.

24. "Marketable securities" is a name under which a great many corporations pad their current assets. Such securities are almost always acquired by the issue of stocks, bonds, or other capital liabilities by the owning company. Hence they are not current assets in such cases at all. To be current assets they would have been acquired and paid for out of surplus earnings and not be the issue of capital liabilities. Usually in figuring the current assets of a corporation, marketable securities should be left out, even though the corporation itself may put them in.

25. "Other and miscellaneous assets" include a great variety of items which differ with almost every corporation. Hence, as a class they cannot well be described. However, three groups of these items are mentioned below.

26. "Advances to subsidiaries" often constitute an important item in the case of holding companies. Such advances, if the subsidiaries are strong in working capital or in earning power, may be considered as a portion of the current assets of the parent concern, but not otherwise.

27. "Cash and securities in the sinking fund and other funds" are not usually shown with clearness even though they are important. The possession of large funds of this account immensely strengthens the financial position of any company.

28. "Deferred debit items" require no explanation.

29. "Capitalization" consists of the four items numbered 30 to 33 inclusive. Also many corporations have short term notes outstanding, and not a few have outstanding "notes and accounts payable," which may or may not be a portion of the true capitalization. If these are merely current accounts payable which are going to be liquidated out of surplus earnings, they should not be included in the capitalization. But if they are debts which are going to be financed through the issue of bonds or long term notes they should be included.

30. "Common stocks" are usually issued not against physical property, but against good-will, franchises and future earning power and prospects. Therefore merely because the capitalization including common stocks exceeds the commercial value of a property, does not prove over-capitalization, unless the common stock was issued for cash and paid for by investors.

31. "Preferred stocks" are generally issued for cash. As a rule these stocks represent mostly tangible values such as earning power, but partly physical values. It cannot be regarded as conservative for the capitalization of a corporation, including the preferred stock

but not the common stock, to exceed the intrinsic value of the property including both tangible and intangible values.

32. The "funded debt" includes not only the outstanding bonds of the company, but also its long term notes and a great many of the short term notes. If a short term note is going to be paid off out of surplus earnings it is not a portion of the funded debt, but otherwise it is.

33. "Securities of subsidiaries" or that portion of them held by investors should be added in in figuring the capitalization of the company. These are often very valuable, and in the case of public utility concerns they not infrequently represent a substantial proportion of the aggregate capitalization.

34. "Current liabilities" are those liabilities which are to be liquidated out of current earnings and receipts. The principal items are enumerated below.

35. "Bills and accounts payable" are hardly ever overstated; but in the case of holding companies it sometimes happens that these are obligations to subsidiaries, and may therefore be nominal unless the subsidiaries owe similar amounts to the public.

36. "Unpaid taxes, interest, vouchers, wages or dividends" require no comment; and this is also true of Items 37 and 38.

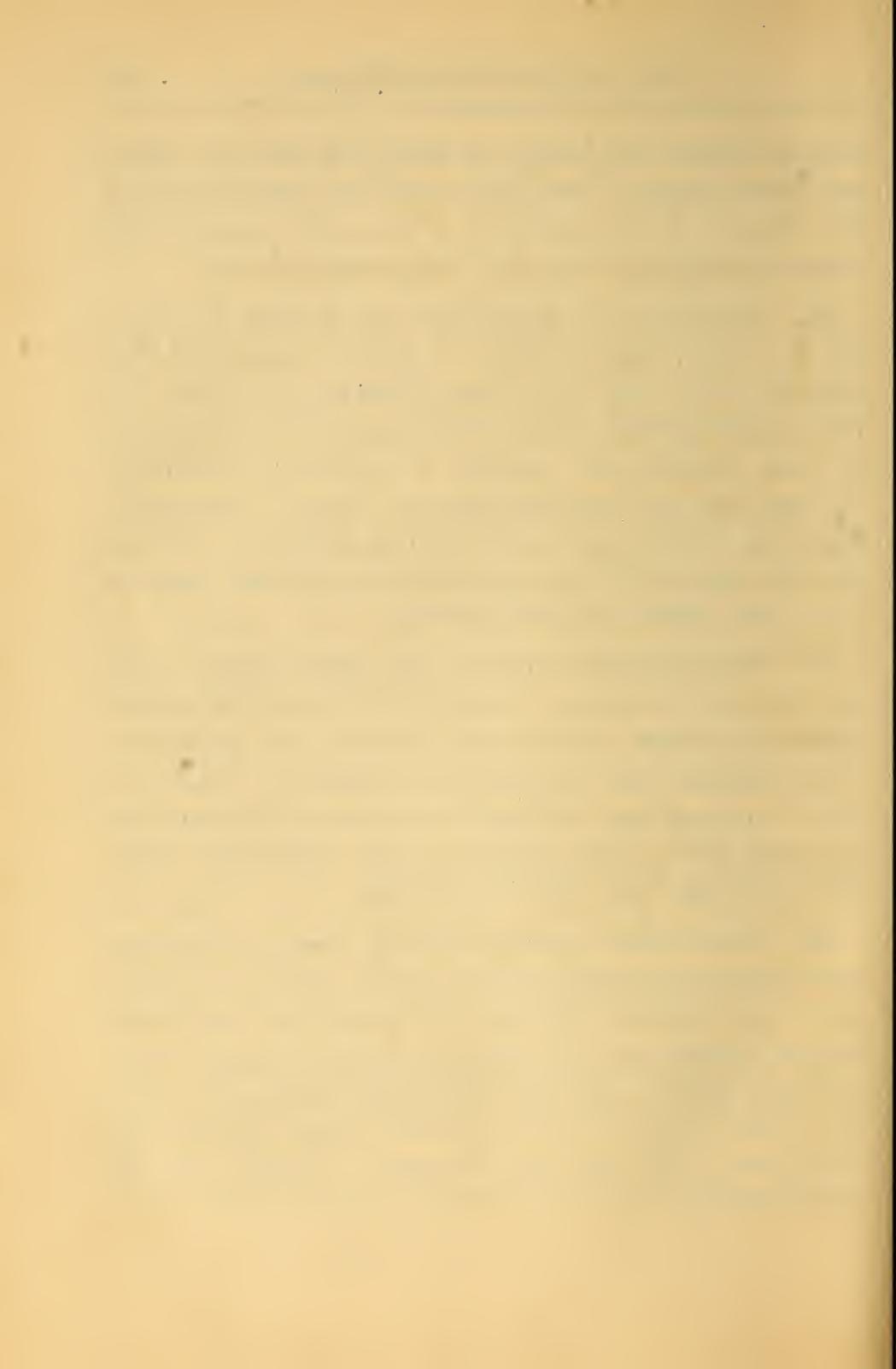
39. "Liabilities of a company to its owners," or stock-

holders, should be sharply distinguished from its liabilities to the public. The latter must be paid to protect the company from insolvency, whereas the former represents merely the debt of a corporation to itself.

40. "Reserves for depreciation, insurance, pensions, damages, etc.," may consist of genuine assets held in reserve, or it may be a mere bookkeeping item. If it represent genuine assets, the company is pretty sure to show considerable amounts of marketable securities or cash, and is absolutely sure to show a substantial excess of current assets over current liabilities. Where no such excess is shown one may regard these reserves as a mere fiction of bookkeeping.

41. "Appropriated surplus for improvements, construction and additional property" is often not shown under this name. It is more likely to be carried as "final surplus" or "accumulated surplus." Most of these surpluses are not liquid assets at all, but merely represent the surplus earnings after dividends which have been put back into the property.

42. "Undivided surplus," if it really undivided, will always be accompanied by a large excess of current assets over current liabilities. If there is no such substantial amount of net working capital one may fairly conclude that the so-called undivided surplus has actually been reinvested in the property where it cannot be withdrawn, and has thus become a portion of the capital assets.



XLVI

Feasibility of Successful Speculation

THREE is no scientific or statistical difficulty about accumulating a fortune in Wall Street in the course of two or three years through margin speculation. Why, then, is it that so few people succeed? In this Chapter I shall attempt to show why it is, and also to point out the methods by which success may be, and sometimes is, achieved. Much is heard of this or that individual or firm which has made a fortune in Wall Street. The impression gained is that the individual concerned has an uncanny knowledge of the future through which he has been able to buy at the bottom and sell at the top, and thus turn hundreds into millions.

Probably 99 per cent. of the fortunes made in speculation are achieved not through margin trading in stocks, but rather through speculating in properties. The process consists of buying up mining lands or industrial plants or other properties and capitalizing and selling them. However, the securities issued against such properties usually exceed the costs of the properties themselves by 50 to 300 per cent. Hence the controlling interests can sell enough of these securities to reimburse them for the entire cost of the properties, and can

still hold enough to control the companies. In this way fortunes are, and always can be made, but if the same individual were to undertake margin speculation, he would almost always certainly fail.

Speculation in properties is perfectly simple to men or syndicates having the necessary means. It is needful only to find properties which under good management are capable of making substantial profits, and where there is enough money for development purposes this is not especially difficult. The next step is to consolidate these under a single corporation and secure the support of a syndicate of banks or bond houses to float the securities. Bonds are issued only for the actual values of the tangible and intangible assets, and preferred and common stocks are issued against earning power and future prospects. All these securities are readily disposed of to the investing public because of the large following which the banks and trust companies can command. The management of the company then proceeds to develop the earning power, paying dividends on the preferred stocks and putting value behind the common stock. By doing this and keeping investors satisfied, the operation can be repeated. Such speculation brings wealth to the promoters and gives a fair return to investors.

However, margin trading is totally different. The trader is confronted by a vast network of Wall Street wisdom crystalized into "axiomatic truths." Most of these "truths," however, have no truth in them. Some

of the more important of these axioms are the following:

1. When the good news is all out stocks sell off
2. When the bad news is all out stocks begin to rise
3. The stock market discounts or anticipates the future far in advance
4. High interest rates cause stocks to decline, and cheap money causes them to advance.

History has demonstrated that all these rules are absolutely worthless and yet probably nine-tenths of all speculators who are attempting to gauge the market by their keenness of judgment are more or less guided by them or by other similar rules. The matter of news is especially interesting, for the novice feels sure that bad news will break the market, and the sophisticated trader feels equally certain of the contrary. Let us notice how some of the important items of news have affected the market.

In November, 1906, when Hearst was defeated as candidate for governor of New York, the market broke five points, even though the almost universal assumption was that it was the Hearst peril that was holding the market down. In September, 1908, when the Commodity Clause of the Hepburn Rate Law was declared unconstitutional, there was a ten point break, amounting for the time almost to a panic, although this was decidedly good news. In December, 1912, after the anthracite roads won in the Sherman Law suit, there was a slight rally and then a big bear movement. In

February, 1911, when the Interstate Commerce Commission rendered its most famous decision in the railroad rate case, there was a slight reaction and then a ten point rise. Following the handing down of the Standard Oil dissolution decision in May, 1911, prices rose continuously for a month and reached the highest level of the year.

These are all instances where the market went contrary to the news, but there are just as many instances where it went with the news. For example, it was the big war orders and huge export trade that put stock prices up so rapidly during 1915. It was the 10 per cent. dividend that caused Union Pacific to rise in 1906 from 140 in July to 195 in September, and it was the huge crops of that year that carried the whole market up with Union Pacific. The slight money panic in March, 1907, broke the prices of leading stocks 22 points, and then in the following December and January with monetary conditions far worse prices rallied 16 points.

These illustrations are sufficient to show that the market has no definite relation to news of any kind. The attempt to acquire wealth through the interpretation of the effects of news upon stock prices is absolutely futile and always certain to fail.

Interpretation of interest rates is equally futile. In the Gates boom of 1905 stocks once climbed up five or ten points a week with call money loaning at 125 per cent. per annum. On the other hand from May to October, 1903, with call money all the time loaning at 3

per cent. stocks were tumbling as if a panic were coming. The bear market of 1910 also occurred in a time when interest rates were very low.

Nor does the market anticipate or discount as the sages of Wall Street assert. On the contrary stock prices are usually a little behind in responding to changes in business conditions. As a broad general rule, the market goes up and down according as general business throughout the United States is becoming more prosperous or more depressed. Instead of anticipating, it follows after. For example, it became certain as early as October, 1906, that extremely serious monetary trouble was coming, and that this would be followed by a severe business depression. But stock prices did not break until March and did not reach bottom until November 21, after the panic had occurred and the improvement had actually begun. The market was tardy in starting upon a bear movement, and also tardy in starting upon the succeeding bull movement.

Likewise in the autumn of 1909, huge expenditures for improvements, new buildings and the like and an era of universal extravagance had produced a sort of fictitious prosperity which was certain to collapse. The rates of increase in railroad earnings, commodity consumption and the like were held to be tokens of greater and greater prosperity. But in fact these rates were so high that they could not possibly be maintained unless the average birthrate of the world could be doubled to keep up the increase in consumption, and the earth could be made to rotate at double speed to

supply the products to be consumed. In spite of the plain evidence that our fool's paradise was going to collapse, stock prices held throughout the balance of the year and did not seriously decline until the late spring of 1910. It is true that the trend of business prosperity is so little understood that changes in it are not realized until many months after they occur; and yet it is also true that the stock market instead of anticipating is usually from one to six months behind the changes in business.

Besides the self-appointed wise men who believe they can interpret the news, there are those who expect to profit by obtaining "inside information." Such information, however, exists mostly in the imagination of the inexperienced. It is true that in regard to the affairs of individual companies, our financiers and some of the directors of the companies, possess valuable information far in advance, but this is not exactly what is generally meant by inside information. The phrase usually bespeaks the belief that our financiers possess an advance knowledge of what the stock market is going to do and control the movements of the market. As a matter of fact, nothing could be more utterly silly, for they possess neither the knowledge nor the control. The New York Stock market represents probably about \$20,000,000,000 of corporation securities, and there is no man or syndicate of men, or bank or combination of banks, which could possibly control the movements of the prices of such a vast aggregate. All

the money in the world would be quite insufficient to do it.

Furthermore, the lauded possessors of American millions have repeatedly shown that, as a class, they have no more foresight than that of humbler citizens. For illustration in the autumn of 1906, when Great Northern preferred was selling between 300 and 348, or about \$125 above the greatest real value it ever possessed, one of these multi-millionaires, who was a personal associate of two of the foremost financiers in the United States at that time, went abroad and left orders to sell out his Great Northern at 500. He evidently expected it would reach that price, but instead it speedily sold off to 142, including the market value of the ore certificates.

Another class of speculators attempt to win fortunes by means of systems, and systems are the laughing stock of Wall Street. Yet they are not nearly so absurd as the axioms which Wall Street accepts and believes. Chief among these systems are the so-called chart method, the tape reading method, studies in the volume of transactions and the bond method. The chart method consists merely in keeping charts of the price movements of stocks, and attempting to interpret their significance. The tape reading method, excluding certain kinds of tape reading which are based upon absurd beliefs that all the quotations are directly controlled by the inside clique, consists in judging from the volumes and prices which way the next movement

of the market will be. The assumption always is that prices will move down when the heavy volumes come out at declines, and vice versa.

Still others tabulate these volumes by days, months and years, and base their conclusions upon the interpretation of the tables. The bond method of speculation has as its basis the fact that bond values are more stable than stock values, and that therefore the bond market usually declines earlier than the stock market, and advances somewhat earlier.

Now the peculiar thing about all these systems is that they are entirely feasible in a scientific way, but almost useless in practice. Any one of these systems, if it could be followed consistently, would yield the speculator a fortune; but it cannot be followed, because the psychological difficulty is too great.

To begin with, the system speculator draws up in his mind or on paper certain rules of interpretation by which to speculate. He then commences his operations with extreme care and a full realization of the difficulties, and success attends his efforts. By a close application to the study of the market, he gradually acquires a kind of subconscious perception of the pace of the market. This perception at times is truly wonderful, for it often enables the trader to unerringly pick the high and low points in the price movements of his favorite stock, even in a wild market. While this strange intuition, which comes at times to all successful traders, lasts, his rules of speculation and his

system of interpreting the statistics of the market fall more and more into disfavor with his own mind. He is able to see future movements so much more quickly than his system shows them, that he becomes completely disgusted with the system. He operates by means of his intuition or subconscious perception and makes thousands where his system would yield only tens or hundreds.

Here lies the psychological difficulty, for it is at this juncture that he throws his system overboard and trusts to his acute judgment. His success lasts just as long as the market maintains the peculiar type of action to which he has become accustomed, but suddenly, without being in the least conscious of it, he utterly loses this subconscious power of interpreting the stock movements. Not being aware of his loss, he continues trading, assuming even larger risks than before, and the profits disappear faster than they came. Success breeds over-confidence, and in a comparatively short time even the successful trader finds that he has abandoned his system, lost his subconscious foresight and lost all his money.

Now, if he had the power to adhere rigidly to the rules of interpretation made by himself, he could unquestionably succeed; but it is pretty difficult for the mind to create a rule so strong that it can dominate that very mind. The creature cannot well be superior to the creator.

All these systems have the merit that they depend upon and take advantage of the law of averages. It

is not especially difficult to lay down a set of rules which would yield so many more profits than losses as to produce great wealth; but the psychological difficulty is insurmountable to the vast majority of men. Success in margin speculation is literally feasible, as is proven by the fact that it has sometimes been attained. It is feasible, however, only to men possessing extremely rare qualities of mind and will; and to ordinary mortals it is about as easy to succeed in such speculation as it is to become a Homer, a Virgil or a Shakespeare.

XLVII

Bond Incomes

IT is the conventional thing for books upon bonds to give great space to learned discussions of the mathematics of bond incomes. The rate of income is often calculated down to a thousandth or even a millionth of one per cent.; but such calculations are of scarcely more practical importance to the ordinary investor than any other problem in higher mathematics. Furthermore, these refined calculations assume a degree of certainty in bond values which is often entirely lacking. Hence it is pertinent to observe several important respects in which the theory of bond values differs from the actual facts.

Nearly all bonds of course are redeemable at par upon maturity; and if bought above par, they should gradually decline while approaching the date of maturity, whereas if bought below they should gradually rise. Furthermore, this advance or decline should in theory be so regular that the bond will all the time yield the same rate of income on its market price. That is to say, an issue which, for example, bears 4 per cent. interest, runs 20 years and is purchased at 96 yields 4.30 per cent., and is supposed to appreciate in price just enough to keep the yield constantly at 4.30.

If all bonds were absolutely secured so as to remove the slightest particle of doubt about their redemption, and if there were no changes either in the condition of the money market or in the general demand for securities, and if the supply of new securities was always exactly the same—this theory would then be true.

In fact, however, even mortgage bonds of undoubted security show substantial variations in both price and yield. Instead of approaching par value in exact proportion as they approach the date of maturity, they respond to all sorts of influences. Among these are the scarcity or abundance of investment capital, the variations in the prevailing interest rates for money, the changes in political conditions, the rise and fall of corporation earnings and the fluctuating tastes of the investing public.

Largely for these reasons the average price of twenty mortgage bonds rose from 88 in December, 1899, to 99 in April, 1902, and then fell to 86 in October, 1903. In March, 1905, these same bonds were up to 99 and in November, 1907, the same list, unchanged except for the substitution of similar issues for those which had matured, showed an average price of 81. By May, 1909, the price had risen to 94, and in July, 1914, it was down again to 83. The variation in the best underlying railroad mortgages and in high grade municipals is much less than this; but it remains true that bond prices do not show the constancy which is assumed in the elaborate calculations of bond incomes.

A factor of no mean importance is the change from year to year in the yield demanded by the public and necessarily granted by corporations seeking new capital. In 1904 new bond issues generally could be readily sold on a 4 per cent. basis; but by 1907 the price of capital, by which is meant the return demanded by the public, was up above 4½ per cent. In 1908 it was down to 4⅓; and from there, there was a rise to 5 per cent. plus in 1909, a slight fall in 1911 and 1912, and a rise above 5 per cent. in 1913.

Still another factor which prevents bond prices from approaching parity by regular stages as the date of maturity draws near, is the comparatively small percentage of strictly high grade bonds which have been issued especially in recent years. Probably no class of corporations in the United States shows better average management than the railroads; and yet, according to the Interstate Commerce Commission less than 72 per cent. of the outstanding railroad bonds are mortgage bonds at all, and many of these are second or third mortgages. A first mortgage bond responds only to investment conditions but a second mortgage or a debenture rises and falls with the surplus earnings of the given corporation. Municipals, excepting those which are very high grade, likewise change in price according to the financial condition of the issuing municipalities.

Convertible and debenture bonds continuously fluctuate according to earnings rather than theoretical

values; and this is true even of some bonds which are so well secured that upon their merits they ought to show greater stability. The bonds of industrial and manufacturing companies are much less stable than those of railroads, and often show considerable variations in price even when the date of maturity is not far away.

In addition, the buyer must consider the chances that he may not hold the bond to maturity; and with an issue selling below par the yield he actually obtains in such an event is very apt to be substantially less than that indicated by the bond tables. For instance, an issue selling at $88\frac{1}{2}$ bearing 4 per cent. and running 15 years, yields 5.10 if held to maturity; but if held only a short time and sold at the same price it was bought it yields only 4.52. Thousands of investors by looking merely at the bond tables, and forgetting the possibility that they might not hold to maturity, have deceived themselves into supposing they were getting a yield quite in excess of that which they actually obtained.

The fact is that a considerable proportion of all bonds are taken out of tin boxes and sold before they reach maturity. This may be seen by comparing the total yearly bond sales in the United States, excluding new issues, with the aggregate par values of all outstanding bonds. This aggregate as of 1914 may be estimated approximately as follows:

Railroad bonds—net in hands of public.....	\$10,309,553,300
Street railway bonds	2,329,221,800
Manufacturing and industrial company bonds...	4,594,452,000
Gas company bonds	455,768,800
Other public utility bonds	1,847,206,300
Miscellaneous bonds	500,000,000
 Total	\$20,036,202,200

Meanwhile the yearly bond sales, excluding new issues, reach a very large total. Sales on the various stock exchanges alone exceed \$700,000,000 a year, and in addition to this all good bond houses resell for their customers a considerable proportion of the bonds previously distributed amongst them. One large New York house in a single year thus re-sold \$20,000,000 of bonds, whereas the annual sales of new issues by this particular house amount to only about \$100,000,000. Many of the sales on the exchanges are no doubt semi-speculative, but even leaving them out of account, the amount re-sold in the United States in a year is probably not less than \$888,000,000.

At this rate it would take but 23 years for all the bonds in the United States to change hands, whereas the typical bond runs about 40 years. The average term of 100 important issues selected at random from the flotations of the past three years was 39 years. It is therefore apparent that there is a very large chance that the investor will not hold his bond to maturity; and considering, in conjunction with this fact, the other important fact that he is more likely to be obliged to sell it in bad times when prices are low than in good

times—it is plain that he should consider the current yield as well as the yield if held to maturity. The two are often a quarter to a half a point apart, and are sometimes a full point apart.

Those who every month invest thousands of dollars in bonds naturally require a good set of bond tables, but those who do not can readily obtain the approximate yield or income basis by a simple arithmetical calculation described below. Such a brief arithmetical method is necessarily lacking in scientific accuracy, as the problem is a complicated algebraic one. By way of illustrating the amount of error which it sometimes shows, the following comparisons are made of the yields as estimated by this method with the yields obtained from the bond tables prepared by Montgomery Rollins.

Price	Inter-		Matur- ity	Yield per M. Rollins	Above Method		
	est Rate	imate Yield			Decimals Dropped	Amount of Error	
97.68	5	18	5.20	5.2009	5.20	0.000	
87.00	4½	14	5.875	5.8922	5.89	0.017	
86.21	3	6	5.75	5.7249	5.72	0.025	
85.12	4	10	6.00	6.0034	6.00	0.003	
52.60	3	50	6.00	5.9807	5.98	0.019	
54.70	3	40	6.00	5.9335	5.93	0.067	
72.32	4	30	6.00	6.0388	6.04	0.039	
100.38	3	4	2.90	2.8989	2.90	0.001	
107.07	4	8	3.00	3.0003	3.00	0.000	
109.03	6	22	5.30	5.3078	5.31	0.008	
113.94	4½	12	3.10	3.1014	3.10	0.001	
146.80	6	20	2.90	2.8763	2.88	0.024	
156.37	6	30	3.10	3.1322	3.13	0.032	

TO FIND INCOME BASIS.

(A) Select from the compound interest table on the opposite page the interest on \$1.00 for the given number of years at the given rate; and multiply this by the price of the bond to obtain the "divisor". Retain in the latter only three decimal places at the right of the decimal point.

(B) Obtain the "difference" between the price of the bond and parity (100); and multiply this difference by the rate of interest the bond pays on its par value in order to obtain what is here arithmetically termed the "dividend". See that there are seven decimal places to the right of the decimal point. As bond prices are quoted in eighths, it may be observed that $\frac{1}{8}$ is equivalent to .125; $\frac{1}{4}$ to .25; $\frac{3}{8}$ to .375; $\frac{1}{2}$ to .5; $\frac{5}{8}$ to .625; $\frac{3}{4}$ to .75; and $\frac{7}{8}$ is equivalent to .875.

(C) Divide the said "dividend" by the said "divisor"; and treat the "quotient" after correcting it as an addition to the current yield of a bond selling below par, or as a deduction from that of one selling above par.

(D) With a bond selling above par:—Observe the "difference" between the price of the bond and par; and cast the eye down the "difference" column in the "Correction table" until the number corresponding to this difference is found. Opposite this number select the "corrector" in the "above par" column, and with this obtain the specified percentage of the "quotient". Use this corrected quotient.

With a bond selling below par:—Proceed in like manner selecting from the “below par” column. Diminish the “quotient” by the specified percentage of itself, and use the quotient thus corrected.

(E) Find the current yield of the bond by dividing its rate of interest with ciphers suffixed by its current price, carrying out the answer to four decimal places at the right of the point.

(F) Then subtract from this current yield or else add to it the said corrected quotient as has been directed in paragraph “c”. Drop two decimal places from the answer thus obtained—correcting the last remaining decimal place to the right—and the result is the approximate income basis of the bond.

Care must be exercised to correctly point off the decimal places in all of these operations; and one must bear in mind the arithmetical rules that the decimal places in the product must equal the sum of those in the multiplier and the multiplicand, and that the decimal places in the quotient must equal the difference between those in the dividend and the divisor. In working with figures taken from the “correction table” it must be remembered that these figures are in percentages or hundredths, and that therefore the decimal point must be moved two places to the left. All these operations can be shortened, if desired, by using fewer decimal places throughout. The following are examples of the working of these rules in the cases of bonds selling both under and over par.

Compound Interest Table

Years	3%	4%	4½%	5%	6%
1	0.0302	0.0404	0.0455	0.0506	0.0609
2	0.0613	0.0824	0.0930	0.1028	0.1255
3	0.0934	0.1261	0.1438	0.1596	0.1940
4	0.1264	0.1715	0.1948	0.2184	0.2667
5	0.1605	0.2188	0.2481	0.2800	0.3439
6	0.1956	0.2681	0.3004	0.3448	0.4257
7	0.2317	0.3193	0.3643	0.4129	0.5125
8	0.2689	0.3726	0.4264	0.4845	0.6047
9	0.3073	0.4281	0.4913	0.5596	0.7024
10	0.3463	0.4858	0.5592	0.6385	0.8061
11	0.3875	0.5458	0.6301	0.7234	0.9161
12	0.4295	0.6082	0.7044	0.8086	1.0326
13	0.4727	0.6732	0.7820	0.9001	1.1564
14	0.5172	0.7408	0.8631	0.9963	1.2878
15	0.5630	0.8111	0.9479	1.0933	1.4271
16	0.6103	0.8843	1.0365	1.2027	1.5749
17	0.6589	0.9604	1.1272	1.3142	1.7317
18	0.7091	1.0396	1.2240	1.4313	1.8981
19	0.7607	1.1220	1.3252	1.5544	2.0746
20	0.8140	1.2078	1.4310	1.6837	2.2618
21	0.8686	1.2970	1.5415	1.8196	2.4605
22	0.9253	1.3898	1.6572	1.9624	2.6712
23	0.9835	1.4863	1.7781	2.1123	2.8948
24	1.0434	1.5868	1.9045	2.2699	3.1320
25	1.1052	1.6913	2.0367	2.4354	3.3836
26	1.1688	1.8006	2.1749	2.6094	3.6506
27	1.2344	1.9131	2.3193	2.7921	3.9338
28	1.3019	2.0318	2.4703	2.9841	4.2343
29	1.3715	2.1543	2.6282	3.1858	4.5531
30	1.4432	2.2818	2.7933	3.3977	4.8913
31	1.5170	2.4144	2.9660	3.6203	5.2500
32	1.5931	2.5523	3.1465	3.8542	5.6307
33	1.6715	2.6958	3.3351	4.0999	6.0345
34	1.7522	2.8451	3.5324	4.3581	6.4629
35	1.8354	3.0005	3.7387	4.6294	6.9174
36	1.9211	3.1621	3.9543	4.9144	7.3996
37	2.0094	3.3302	4.1798	5.2138	7.9111
38	2.1004	3.5052	4.4146	5.5284	8.4538
39	2.1941	3.6872	4.6610	5.8589	9.0295
40	2.2907	3.8766	4.9288	6.2061	9.6403
41	2.3901	4.0736	5.1986	6.5709	10.2883
42	2.4926	4.2785	5.4807	6.9542	10.9758
43	2.5982	4.4928	5.7756	7.3569	11.7051
44	2.7070	4.7147	6.0840	7.7800	12.8832
45	2.8191	4.9456	6.4062	8.2245	13.7287
46	2.9345	5.1858	6.7430	8.6915	14.6257
47	3.0432	5.4357	7.0954	9.1822	15.5773
48	3.1655	5.6957	7.4638	9.6967	16.5868
49	3.2914	5.9662	7.8490	10.2383	17.6597
50	3.4211	6.2477	8.2516	10.8072	18.7941

A 4% bond selling at 85.19 and running 20 years	A 5 bond selling at 105.91 and running 25 years
(A)	(A)
1.2078—from int. table	2.4354—from int. table
85.19—price of bond	105.91—price of bond
10 8702	243 54
12 078	2 1918 6
6 03 90	12 1770
96 62 4	243 54
102.89 2482	257.9332 14
Use 102.892 as "divisor"	Use 257.933 as "divisor"
(B)	(B)
100.00—par value	105.91—price of bond
85.19—price of bond	100.00—par value
14.81—"difference"	5.91—"difference"
4	5
59.24	29.55
Suffix decimals, thus using 59.2400000 as "dividend"	Suffix decimal places, using 29.5500000 as "dividend"
(C)	(C)
102.892 | 59.2400000 | 5757—"quotient"	257.933 | 29.5500000 | .1146—"quotient"
51 4460	25 7933
7 79400	3 75670
7 20244	2 57933
591560	1 177370
514460	1 031732
771000	1456380
(D)	(D)
5 757	1 146
.094—"corrector"	1.032—"corrector"
23 028	2 292
518 13	34 38
541.158	1146
5757—"quotient"	1182.672
541—"deduction"	
5216—"corrected quotient"	1183—"corrected quotient"
(E)	(E)
85.19 | 4.00000000 | 4.6954—"current yield"	105.91 | 5.00000000 | 4.7209—"current yield"
3 4076	4 2364
59240	76360
51114	74137
81260	22230
76671	21182
45890	104800
42595	
32950	
(F)	(F)
4.6954—"current yield"	4.7209—"current yield"
plus 5216—"corrected quotient"	minus 1183—"corrected quotient"
5.2170	4.6026
5.22% is estimated yield	4.60% is estimated yield

Correction Table

Difference	Above Par Corrector	Below Par Corrector
1	100.5%	0.3%
2	100.9	0.7
3	101.5	1.1
4	102.0	1.5
5	102.6	2.0
6	103.2	2.5
7	103.8	3.1
8	104.4	3.8
9	105.0	4.4
10	105.7	5.2
11	106.4	5.9
12	107.1	6.7
13	107.8	7.6
14	108.5	8.5
15	109.3	9.4
16	110.1	10.4
17	110.9	11.5
18	111.7	12.5
19	112.5	13.6
20	113.4	14.8
21	114.3	16.0
22	115.2	17.3
23	116.1	18.6
24	117.0	19.9
25	118.0	21.3
26	119.0	22.8
27	120.0	24.2
28	121.0	25.8
29	122.0	27.3
30	123.1	28.9
31	124.2	30.6
32	125.3	32.3
33	126.4	34.1
34	127.5	35.9
35	128.7	37.7
36	129.9	39.6
37	131.1	41.5
38	132.3	43.5
39	133.5	45.5
40	134.8	47.6
41	136.1	49.7
42	137.4	51.8
43	138.7	54.0
44	140.0	56.3
45	141.4	58.6
46	142.8	60.9
47	143.2	63.3
48	145.6	65.7
49	147.0	68.2
50	148.5	70.7

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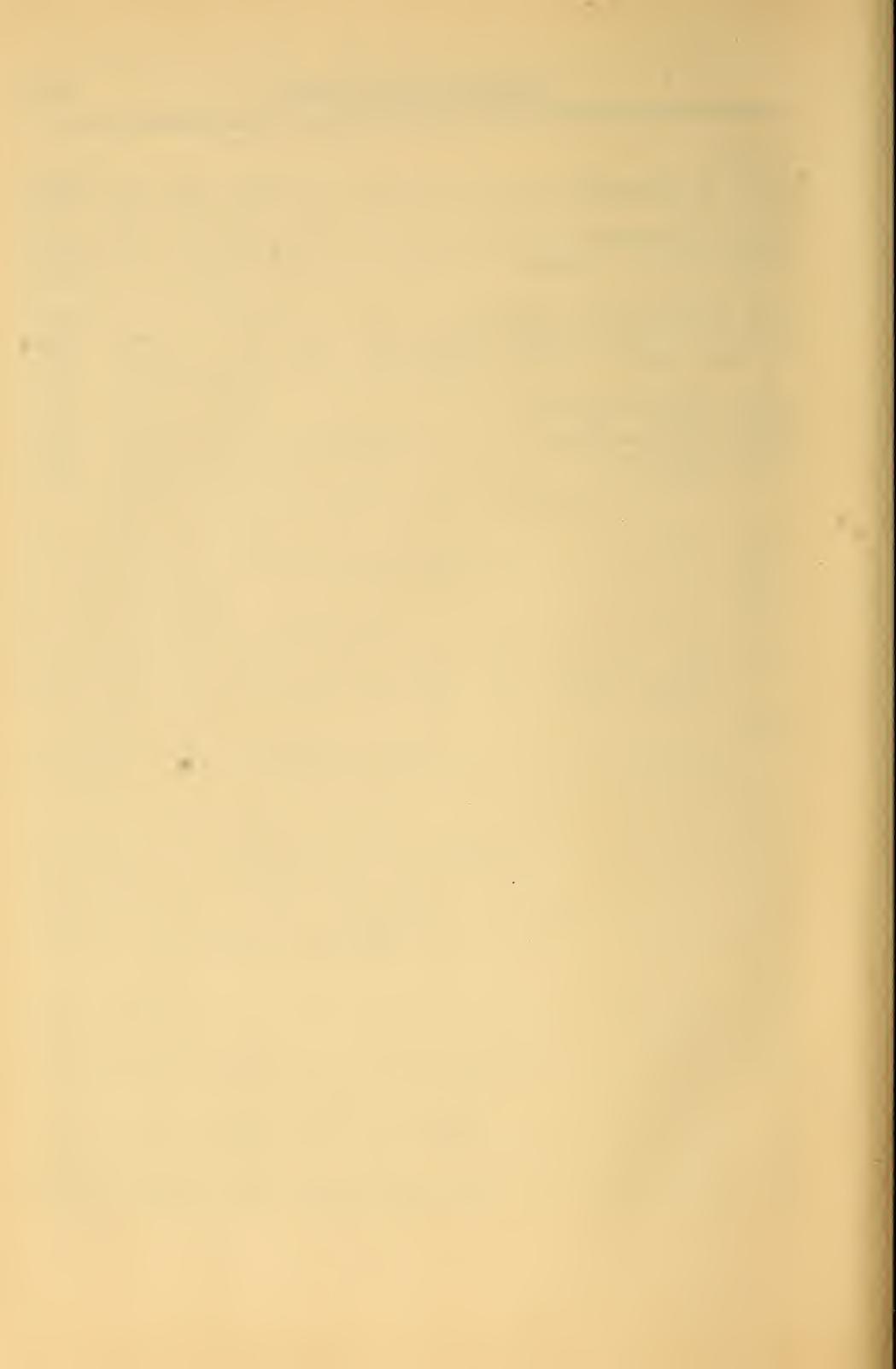
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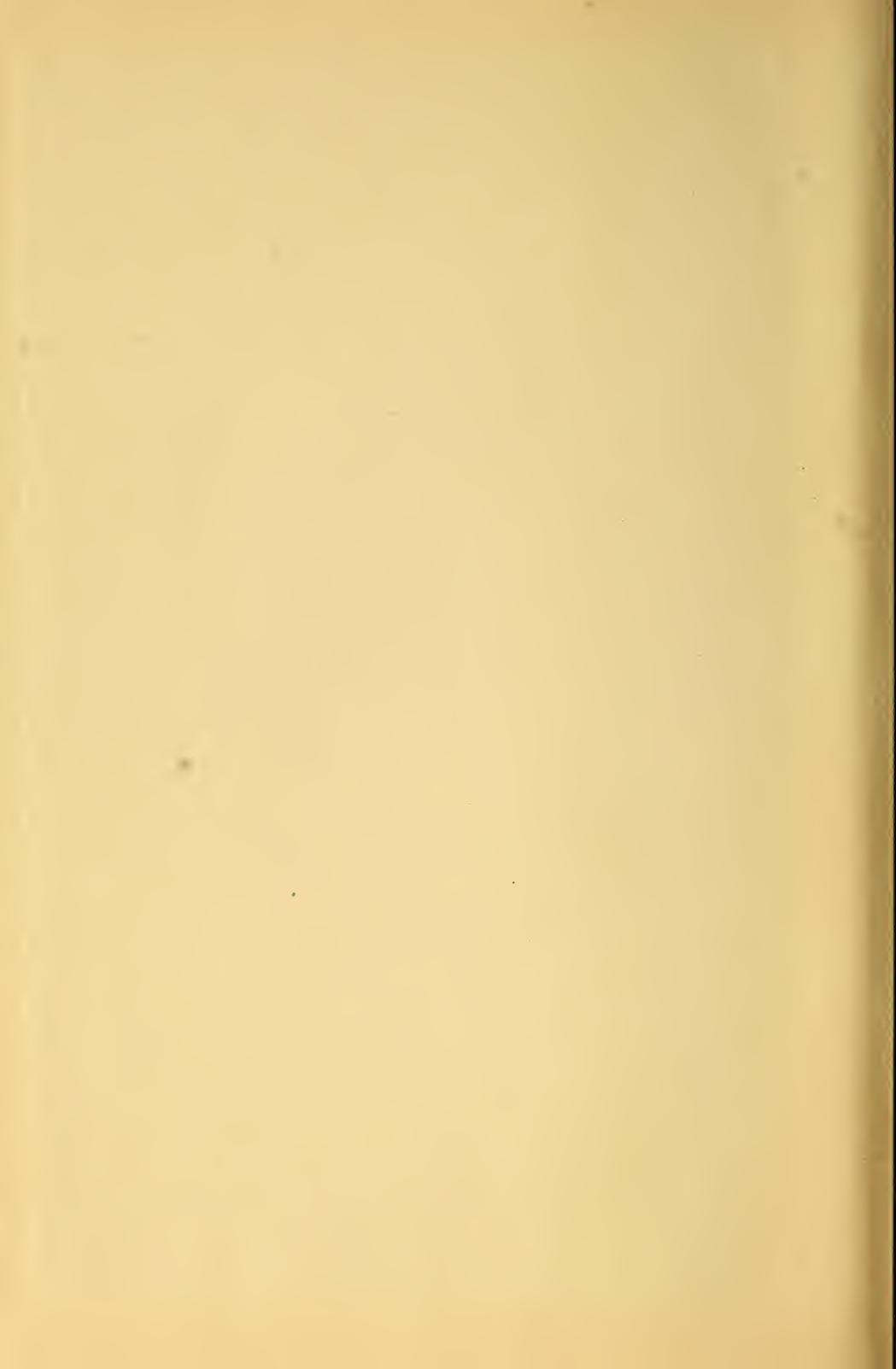
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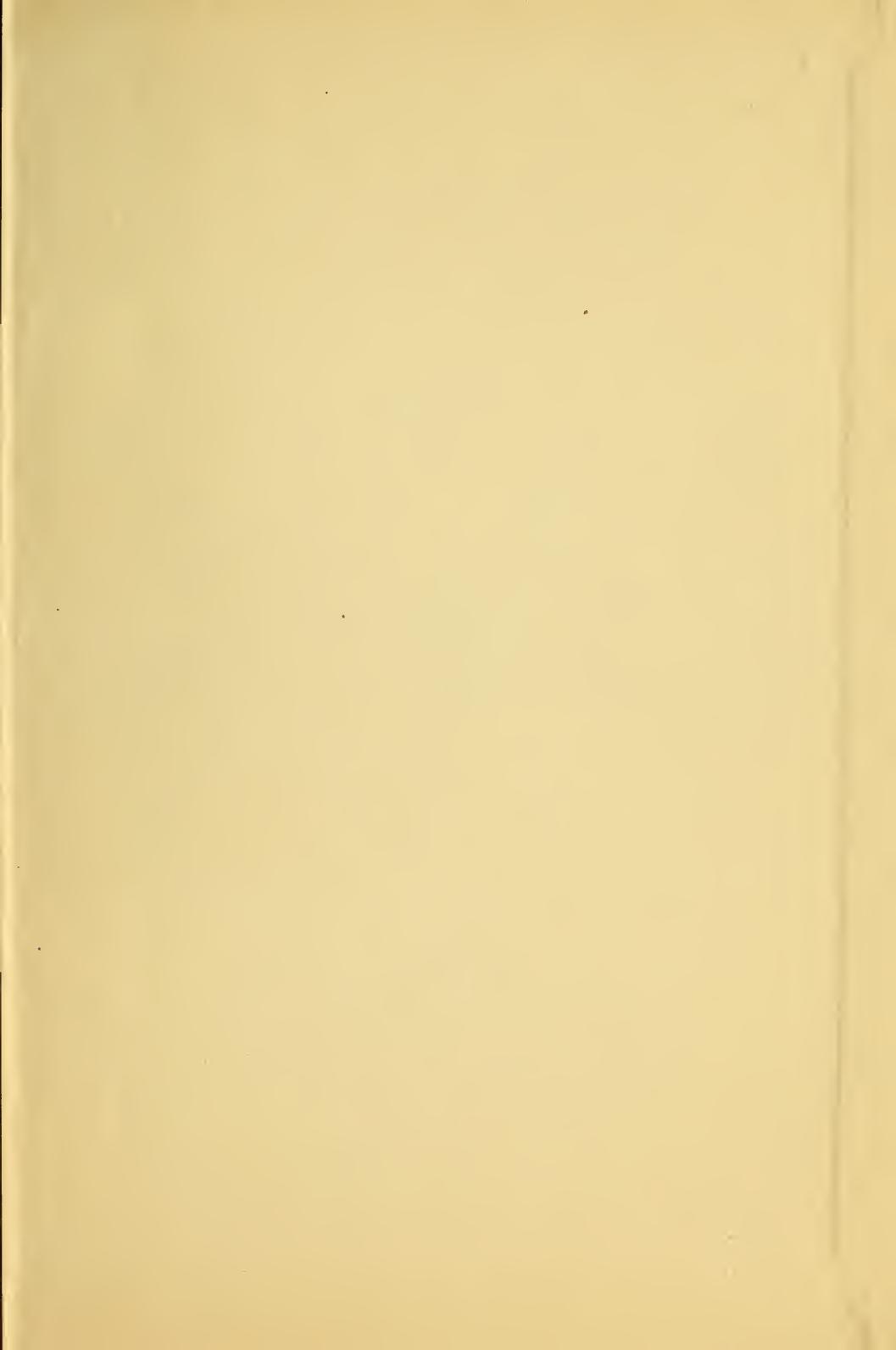




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